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Birds

AMERICAN ORNITHOLOGY;

OR,

THE NATURAL HISTORY

OF

THE BIRDS OF THE UNITED STATES.

BY ALEXANDER WILSON;

WITH A CONTINUATION

BY CHARLES LUCIAN BONAPARTE,

PRINCE OF MUSIGNANO.

THE

ILLUSTRATIVE NOTES, AND LIFE OF WILSON,

BY

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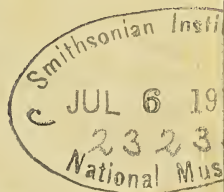
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WILSON'S

AMERICAN ORNITHOLOGY.

GREEN HERON.—ARDEA VIRESCENS.—PLATE LXI. FIG. 1.

Arct. Zool. No. 349, 350.—*Catesby*, i. p. 80.—*Le Crabier vert*, *Buff.* vii. p. 404.
—*Lath. Syn.* iii. p. 68.—*Peale's Museum*, No. 3797.

ARDEA VIRESCENS—LINNÆUS.*

Ardea virescens, *Bonap. Synop.* p. 307.—*Wagl. Syst. av.* No. 36.

THIS common and familiar species owes little to the liberality of public opinion, whose prejudices have stigmatized it with a

* There are two or three beautiful little herons confounded under this species, in the same manner from their near alliance, as the little bittern of Europe has been with *A. exilis* and *pusilla*. They are all, however, to be distinguished when compared together, or when attention is given to the markings. The nearest ally to *A. virescens* is the East Indian *A. scapularis*; the upper parts of both are nearly similar, but the neck and under parts differ in being of a deep vinous chestnut in the one, and rich ash grey in the other. In Wilson's Plate, the chestnut colour is not represented of a deep enough tint, and too much white is shown on the fore part.

In a specimen which I have lately received from South Carolina, the colour of the neck is very deep and rich, almost approaching to that of port wine; the lengthened feathers of the back are remarkably long, and show well the white shafts which ought to be so conspicuous in both species. The confusion in the greater part of the synonymes must have arisen by the specimens from both countries being indiscriminately compared and described.—ED.

very vulgar and indelicate nickname, and treat it on all occasions as worthless and contemptible. Yet few birds are more independent of man than this; for it fares best, and is always most numerous, where cultivation is least known or attended to; its favourite residence being the watery solitudes of swamps, pools, and morasses, where millions of frogs and lizards "tune their nocturnal notes" in full chorus, undisturbed by the lords of creation.

The green bittern makes its first appearance in Pennsylvania early in April, soon after the marshes are completely thawed. There, among the stagnant ditches with which they are intersected, and amidst the bogs and quagmires, he hunts with great cunning and dexterity. Frogs and small fish are his principal game, whose caution, and facility of escape, require nice address, and rapidity of attack. When on the lookout for small fish, he stands in the water, by the side of the ditch, silent and motionless as a statue; his neck drawn in over his breast, ready for action. The instant a fry or minnow comes within the range of his bill, by a stroke, quick and sure as that of the rattlesnake, he seizes his prey, and swallows it in an instant. He searches for small crabs, and for the various worms and larvæ, particularly those of the dragon-fly, which lurk in the mud, with equal adroitness. But the capturing of frogs requires much nicer management. These wary reptiles shrink into the mire on the least alarm, and do not raise up their heads again to the surface without the most cautious circumspection. The bittern, fixing his penetrating eye on the spot where they disappeared, approaches with slow stealing step, laying his feet so gently and silently on the ground, as not to be heard or felt; and, when arrived within reach, stands fixed, and bending forwards, until the first glimpse of the frog's head makes its appearance, when, with a stroke instantaneous as lightning, he seizes it in his bill, beats it to death, and feasts on it at his leisure.

This mode of life, requiring little fatigue where game is so plenty, as is generally the case in all our marshes, must be

particularly pleasing to the bird, and also very interesting, from the continual exercise of cunning and ingenuity necessary to circumvent its prey. Some of the naturalists of Europe, however, in their superior wisdom, think very differently ; and one can scarcely refrain from smiling at the absurdity of those writers, who declare, that the lives of this whole class of birds are rendered miserable by toil and hunger ; their very appearance, according to Buffon, presenting the image of suffering, anxiety, and indigence.*

When alarmed, the green bittern rises with a hollow guttural scream ; does not fly far, but usually alights on some old stump, tree, or fence adjoining, and looks about with extended neck ; though, sometimes, this is drawn in so, that his head seems to rest on his breast. As he walks along the fence, or stands gazing at you with outstretched neck, he has the frequent habit of jetting the tail. He sometimes flies high, with doubled neck, and legs extended behind, flapping the wings smartly, and travelling with great expedition. He is the least shy of all our herons ; and, perhaps, the most numerous and generally dispersed, being found far in the interior, as well as along our salt marshes ; and every where about the muddy shores of our mill-ponds, creeks, and large rivers.

The green bittern begins to build about the 20th of April ; sometimes in single pairs, in swampy woods ; often in companies ; and not unfrequently in a kind of association with the qua-birds, or night herons. The nest is fixed among the branches of the trees ; is constructed wholly of small sticks, lined with finer twigs, and is of considerable size, though loosely put together. The female lays four eggs, of the common oblong form, and of a pale light blue colour. The young do not leave the nest until able to fly ; and, for the first season at least, are destitute of the long-pointed plumage on the back ; the lower parts are also lighter, and the white on the throat broader. During the whole summer, and until late in autumn, these

* *Histoire Naturelle des Oiseaux*, tome xxii. p. 343.

birds are seen in our meadows and marshes, but never remain during winter in any part of the United States.

The green bittern is eighteen inches long, and twenty-five inches in extent; bill black, lighter below, and yellow at the base; chin, and narrow streak down the throat, yellowish white; neck, dark vinaceous red; back, covered with very long, tapering, pointed feathers, of a hoary green, shafted with white, on a dark green ground; the hind part of the neck is destitute of plumage, that it may be the more conveniently drawn in over the breast, but is covered with the long feathers of the throat and sides of the neck, that enclose it behind; wings and tail, dark glossy green, tipt and bordered with yellowish white; legs and feet, yellow, tinged before with green, the skin of these thick and movable; belly, ashy brown; irides, bright orange; crested head, very dark glossy green. The female, as I have particularly observed, in numerous instances, differs in nothing, as to colour, from the male; neither of them receive the long feathers on the back during the first season.

There is one circumstance attending this bird, which, I recollect, at first surprised me. On shooting and wounding one, I carried it some distance by the legs, which were at first yellow; but on reaching home, I perceived, to my surprise, that they were red. On letting the bird remain some time undisturbed, they again became yellow, and I then discovered that the action of the hand had brought a flow of blood into them, and produced the change of colour. I have remarked the same in those of the night heron.

NIGHT HERON, OR QUA-BIRD.—ARDEA NYCTICORAX.

PLATE LXI. FIG. 2, FIG. 3, YOUNG.

Arct. Zool. No. 356.—Le Bichoreau, *Buff.* vii. 435, 439. vol. 22; *Pl. Enl.* 758, 759, 999.—*Lath. Syn.* iii. p. 52, No. 13; p. 53, young, called there the female.—*Peale's Museum*, No. 3728; young, No. 3729.

NYCTICORAX GARDENII*

Ardea nycticorax, *Temm. Man.* ii. p. 577.—Gardenian Heron, *Mont. Orn. Dict.* i. —*Bonap. Synop.* p. 306.—*Wagl. Syst. av.* *Ardea*, No. 31.

THIS species, though common to both continents, and known in Europe for many centuries, has been so erroneously described by all the European naturalists whose works I have examined, as to require more than common notice in this place. For this purpose, an accurate figure of the male is given, and also another of what has till now been universally considered the female, with a detail of so much of their history as I am personally acquainted with.

* *Nycticorax*, or night raven, has been adopted to designate this from among the *ardeade*, from the circumstance of their feeding by night, and remaining in a state of comparative rest and inactivity during the day. New Holland and Africa each possess a species. Europe and North America have one in common to both countries; in the former, abundantly distributed, while, in the latter, it is of rare occurrence even towards the south, and in the northern parts of Great Britain, only a few instances have occurred of its capture.

In form, they are intermediate between the bitterns and true herons; the bill is short, and stronger in proportion than in either; the feathers on the sides of the neck are lengthened, and cover the hinder part, which is bare to a certain extent; and in all the species, the hind head is adorned with (generally three) narrow feathers, in the form of a crest. They feed by twilight, or in clear nights; and take their prey by watching, in the manner of the herons. They are gregarious, build on trees, and during the season of incubation are noisy and restless.

The colours in the adults of the true species, are ash grey, or pale fawn; the crown and hind head, and the back, or that part called by the French *manteau*, in the ash grey species, dark glossy green; in the fawn coloured, deep chestnut. The young are always of a duskier tinge, and have the centre and tips of each feather white, giving the plumage a spotted appearance.—ED.

The night heron arrives in Pennsylvania early in April, and immediately takes possession of his former breeding place, which is usually the most solitary and deeply shaded part of a cedar swamp. Groves of swamp oak, in retired and inundated places, are also sometimes chosen, and the males not unfrequently select tall woods, on the banks of the river, to roost in during the day. These last regularly direct their course, about the beginning of evening twilight, towards the marshes, uttering, in a hoarse and hollow tone, the sound *Qua*, which by some has been compared to that produced by the retchings of a person attempting to vomit. At this hour, also, all the nurseries in the swamps are emptied of their inhabitants, who disperse about the marshes, and along the ditches and river shore, in quest of food. Some of these breeding places have been occupied every spring and summer for time immemorial, by from eighty to one hundred pairs of qua-birds. In places where the cedars have been cut down for sale, the birds have merely removed to another quarter of the swamp; but when personally attacked, long teased, and plundered, they have been known to remove from an ancient breeding place, in a body, no one knew where. Such was the case with one on the Delaware, near Thompson's Point, ten or twelve miles below Philadelphia; which having been repeatedly attacked and plundered by a body of crows, after many severe rencounters, the herons finally abandoned the place. Several of these breeding places occur among the red cedars on the sea beach of Cape May, intermixed with those of the little egret, green bittern, and blue heron. The nests are built entirely of sticks, in considerable quantities, with frequently three and four nests on the same tree. The eggs are generally four in number, measuring two inches and a quarter in length, by one and three quarters in thickness, and of a very pale light blue colour. The ground or marsh below is bespattered with their excrements lying all around like whitewash, with feathers, broken egg shells, old nests, and frequently small fish, which they have dropt by accident, and neglected to pick up.

On entering the swamp in the neighbourhood of one of these breeding places, the noise of the old and the young would almost induce one to suppose that two or three hundred Indians were choking or throttling each other. The instant an intruder is discovered, the whole rise in the air in silence, and remove to the tops of the trees in another part of the woods, while parties of from eight to ten make occasional circuits over the spot to see what is going on. When the young are able, they climb to the highest part of the trees; but, knowing their inability, do not attempt to fly. Though it is probable that these nocturnal birds do not see well during the day, yet their faculty of hearing must be exquisite, as it is almost impossible, with all the precautions one can use, to penetrate near their residence without being discovered. Several species of hawks hover around, making an occasional sweep among the young; and the bald eagle himself has been seen reconnoitring near the spot, probably with the same design.

Contrary to the generally received opinion, the males and females of these birds are so alike in colour as scarcely to be distinguished from each other; both have also the long slender plumes that flow from the head. These facts I have exhibited by dissection on several subjects, to different literary gentlemen of my acquaintance, particularly to my venerable friend, Mr William Bartram, to whom I have also often shown the young, represented at fig. 3. One of these last, which was kept for some time in the botanic garden of that gentleman, by its voice instantly betrayed its origin, to the satisfaction of all who examined it. These young certainly receive their full coloured plumage before the succeeding spring, as, on their first arrival, no birds are to be seen in the dress of fig. 3; but, soon after they have bred, these become more numerous than the others. Early in October they migrate to the south. According to Buffon, these birds also inhabit Cayenne, and are found widely dispersed over Europe, Asia, and America. The European species, however, is certainly much smaller than the American, though in other respects corresponding exactly to it. Among a great

number which I examined with attention, the following description was carefully taken from a common sized full-grown male:—

Length of the night heron, two feet four inches; extent, four feet; bill black, four inches and a quarter long, from the corners of the mouth to the tip; lores, or space between the eye and bill, a bare bluish white skin; eyelids also large and bare, of a deep purple blue; eye, three-quarters of an inch in diameter; the iris of a brilliant blood red; pupil, black; crested crown, and hind head deep dark blue, glossed with green; front and line over the eye, white; from the hind head proceed three very narrow, white, tapering feathers, between eight and nine inches in length; the vanes of these are concave below, the upper one enclosing the next, and that again the lower; though separated by the hand, if the plumage be again shook several times, these long flowing plumes gradually enclose each other, appearing as one; these, the bird has the habit of erecting when angry or alarmed; the cheeks, neck, and whole lower parts, are white, tintured with yellowish cream, and under the wings, with very pale ash; back and scapulars, of the same deep dark blue, glossed with green, as that of the crown; rump and tail-coverts, as well as the whole wings and tail, very pale ash; legs and feet, a pale yellow cream colour; inside of the middle claw, serrated.

The female differed in nothing as to plumage from the male, but in the wings being of rather a deeper ash, having not only the dark deep green blue crown and back, but also the long pendant white plumes from the hind head. Each of the females contained a large cluster of eggs of various sizes.

The young (fig. 3.) was shot soon after it had left the nest, and differed very little from those which had been taken from the trees, except in being somewhat larger. This measured twenty-one inches in length, and three feet in extent; the general colour above, a very deep brown, streaked with reddish white, the spots of white on the back and wings being triangular, from the centre of the feather to the tip; quills,

deep dusky, marked on the tips with a spot of white; eye, vivid orange; belly white, streaked with dusky, the feathers being pale dusky, streaked down their centres with white; legs and feet, light green; inside of the middle claw slightly pectinated; body and wings exceedingly thin and limber; the down still stuck in slight tufts to the tips of some of the feathers.

The birds also breed in great numbers in the neighbourhood of New Orleans; for, being in that city in the month of June, I frequently observed the Indians sitting in market with the dead and living young birds for sale; also numbers of grey owls (*strix nebulosa*), and the white ibis (*tantalus albus*), for which nice dainties I observed they generally found purchasers.

The food of the night heron, or qua-bird, is chiefly composed of small fish, which it takes by night. Those that I opened had a large expansion of the gullet immediately under the bill, that narrowed from thence to the stomach, which is a large oblong pouch, and was filled with fish. The teeth of the pectinated claw were thirty-five or forty in number, and, as they contained particles of the down of the bird, showed evidently, from this circumstance, that they act the part of a comb, to rid the bird of vermin in those parts which it cannot reach with its bill.

GREAT WHITE HERON.—ARDEA EGRETTE.—PLATE LXI.

FIG. 4.

EGRETTE LEUCE.—JARDINE,*

Ardea leuce, *Illig.*—*Ardea alba*, *Bonap. Synop.* p. 304.—*Ardea egretta*, *Wagl. Syst. av.* No. 7.—*Bonap. monog. del gruppo Egretta, osserv. sulla, 2d Edit. del reg. anim. Cuv.*

THIS tall and elegant bird, though often seen, during the summer, in our low marshes and inundated meadows, yet, on

* Among no birds has there occurred so much confusion as among the white herons, or those more particularly forming the division, *Egretts*. They are distributed over every country of the world, are not very different in size, the young are chiefly distinguished by the want of the crest, and are in many instances

account of its extreme vigilance, and watchful timidity, is very difficult to be procured. Its principal residence is in the regions of the south, being found from Guiana, and probably beyond the line, to New York. It enters the territories of the United States late in February; this I conjecture from having first met with it in the southern parts of Georgia about that time. The high inland parts of the country it rarely or never visits;—its favourite haunts are vast inundated swamps, rice-fields, the low marshy shores of rivers, and such like places, where, from its size and colour, it is very conspicuous, even at a great distance.

The appearance of this bird, during the first season, when it is entirely destitute of the long flowing plumes of the back, is so different from the same bird in its perfect plumage, which it obtains in the third year, that naturalists, and others, very generally consider them as two distinct species. The opportunities which I have fortunately had of observing them with the train in various stages of its progress, from its first appearance to its full growth, satisfies me that the great white heron with, and that without, the long plumes, are one and the same species, in different periods of age. In the museum of my friend, Mr Peale, there is a specimen of this bird, in which the train is wanting; but on a closer examination, its rudiments

of a plumage similar to the full winter dress: most of the species when mature are clothed in a garb of the purest white.

The bird with which our present species is more immediately connected, is the *Ardea alba*, Gmel., a European bird, confounded with the young of *A. egretta*, and not yet, I believe, found in North America. The chief differences are presence of the crest, and much longer proportion of the legs. *A. egretta* seems to range extensively over the continents of America, and some of the islands; I am not aware of its being found elsewhere; and the African, Asiatic, and New Holland allied species, will, I suspect, turn out distinct, and most probably belong to their respective countries.

To the North American *egretta* must be added the *Ardea Pealii*, discovered by Bonaparte. It is distinguished from its allies by the flesh colour of the bill, is much smaller than *A. alba*, differs from *A. garzetta* by its large compound crest, and from *A. candissima*, by the quality and texture of the ornamental feathers.—
ED.

are plainly to be perceived, extending several inches beyond the common plumage.

The great white heron breeds in several of the extensive cedar swamps in the lower parts of New Jersey. Their nests are built on the trees, in societies; the structure and materials exactly similar to those of the snowy heron, but larger. The eggs are usually four, of a pale-blue colour. In the months of July and August, the young make their first appearance in the meadows and marshes, in parties of twenty or thirty together. The large ditches with which the extensive meadows below Philadelphia are intersected, are regularly, about that season, visited by flocks of those birds; these are frequently shot, but the old ones are too sagacious to be easily approached. Their food consists of frogs, lizards, small fish, insects, seeds of the splatterdock (a species of *nymphæ*), and small water-snakes. They will also devour mice and moles, the remains of such having been at different times found in their stomachs.

The long plumes of these birds have at various periods been in great request on the continent of Europe, particularly in France and Italy, for the purpose of ornamenting the female head-dress. When dyed of various colours, and tastefully fashioned, they form a light and elegant duster and musquitto brush. The Indians prize them for ornamenting their hair, or top-knot; and I have occasionally observed these people wandering through the market-place of New Orleans, with bunches of those feathers for sale.

The great white heron measures five feet from the extremities of the wings, and three feet six inches from the tip of the bill to the end of the tail; the train extends seven or eight inches farther. This train is composed of a great number of long, thick, tapering shafts, arising from the lower part of the shoulders, and thinly furnished on each side with fine flowing hair-like threads, of several inches in length, covering the lower part of the back, and falling gracefully over the tail, which it entirely conceals. The whole plumage is of a snowy whiteness, except the train, which is slightly tinged with yel-

low. The bill is nearly six inches in length, of a rich orange yellow, tipped with black; irides, a paler orange; pupil, small, giving the bird a sharp and piercing aspect; the legs are long, stout, and of a black colour, as is the bare space of four inches above the knee; the span of the foot measures upwards of six inches; the inner edge of the middle claw is pectinated; the exterior and middle toes are united at the base, for about half an inch, by a membrane.

The articulations of the vertebræ are remarkably long; the intestines measure upwards of eight feet, and are very narrow. The male and female are alike in plumage; both, when of full age, having the train equally long.

VIRGINIAN RAIL.—*RALLUS VIRGINIANUS*.

PLATE LXII. FIG. 1.

Arct. Zool. No. 408.—*Edw.* 279.—*Lath. Syn.* iii. p. 208, No. 1,—var. A.—*Peale's Museum*, No. 4426.

RALLUS VIRGINIANUS.—LINNÆUS.*

Rallus Virginianus, *Bonap. Synop.* p. 334.

THIS species very much resembles the European water rail (*rallus aquaticus*), but is smaller, and has none of the

* In my note upon the genus *Crex*, I mentioned the distinctions existing between that genus *Gallinula* and *Rallus*. The Virginian rail, and that following, show good examples of the latter form. In their habits they closely agree with the aquatic species of *Crex*, are distributed over all countries of the world, and in general perform partial migrations.

When pursued or *roaded* by a dog, they may be raised once, but the second time will be a task of more difficulty; if the ground is an extensive meadow they may be followed for an hour without success, but if there are holes or ditches they will generally seek for one of these, where they conceal themselves beneath some sod, or brow, or thicket of bushes, and may then be easily taken by the hand. I have frequently taken our common water rail in this manner, and sometimes with the head only concealed. They are easily tamed. The structure of the feathers on the forehead and crown of the rails is peculiar, and may be intended

slate or lead colour on the breast, which marks that of the old continent; its toes are also more than proportionably shorter, which, with a few other peculiarities, distinguish the species. It is far less numerous in this part of the United States than our common rail, and, as I apprehend, inhabits more remote northern regions. It is frequently seen along the borders of our salt marshes, which the other rarely visits; and also breeds there, as well as among the meadows that border our large rivers. It spreads over the interior as far west as the Ohio, having myself shot it in the barrens of Kentucky early in May. The people there observe them in wet places, in the groves, only in spring. It feeds less on vegetable, and more on animal, food than the common rail. During the months of September and October, when the reeds and wild oats swarm with the latter species, feeding on their nutritious seeds, a few of the present kind are occasionally found; but not one for five hundred of the others. The food of the present species consists of small snail shells, worms, and the larvæ of insects, which it extracts from the mud; hence the cause of its greater length of bill, to enable it the more readily to reach its food. On this account also, its flesh is much inferior to that of the other. In most of its habits, its thin compressed form of body, its aversion to take wing, and the dexterity with which it runs or conceals itself among the grass and sedge, are exactly similar to those of the common rail, from which genus, notwithstanding the difference of its bill, it ought not to be separated.

as a defence to that part from the friction of the strong grass and reeds among which they are so constantly running. The rachis of each feather is lengthened, and broadened into a flat and sharp point, having the appearance of lengthened scales; in one or two species, the feathers consist of the rachis alone, presenting a horny appearance over the whole forehead. The bastard pinion is furnished with a spur, concealed, however, by the plumage.

The form of the Crakes and Gallinules is well adapted for their peculiar manner of life, but in this group is most conspicuous. The legs are placed far behind, the body is long, much flattened, and remarkably pliable; and the ease and agility with which they run and thread through the long vegetation of the marshes, is almost inconceivable to a person who has not witnessed it.—ED.

This bird is known to some of the inhabitants along the sea-coast of New Jersey, by the name of the fresh-water mud hen, this last being the common appellation of the clapper rail, which the present species resembles in every thing but size. The epithet fresh-water is given it, because of its frequenting those parts of the marsh only where fresh water springs rise through the bogs into the salt marshes. In these places it usually constructs its nest, one of which, through the active exertions of my friend, Mr Ord, while traversing with me the salt marshes of Cape May, we had the good fortune to discover. It was built in the bottom of a tuft of grass, in the midst of an almost impenetrable quagmire, and was composed altogether of old wet grass and rushes. The eggs had been floated out of the nest by the extraordinary rise of the tide in a violent north-east storm, and lay scattered about among the drift weed. The female, however, still lingered near the spot, to which she was so attached, as to suffer herself to be taken by hand. She doubtless intended to repair her nest, and commence laying anew; as, during the few hours that she was in our possession, she laid one egg, corresponding in all respects with the others. On examining those floated out of the nest, they contained young, perfectly formed, but dead. The usual number of eggs is from six to ten. They are shaped like those of the domestic hen, measuring one inch and two-tenths long, by very nearly half an inch in width, and are of a dirty white, or pale cream colour, sprinkled with specks of reddish and pale purple, most numerous near the great end. They commence laying early in May, and probably raise two brood in the season. I suspect this from the circumstance of Mr Ord having, late in the month of July, brought me several young ones of only a few days old, which were caught among the grass near the border of the Delaware. The parent rail showed great solicitude for their safety. They were wholly black, except a white spot on the bill; were covered with a fine down, and had a soft piping note. In the month of June of the same year, another pair of these birds began to breed amidst a boggy spring

in one of Mr Bartram's meadows, but were unfortunately destroyed.

The Virginian rail is migratory, never wintering in the northern or middle states. It makes its first appearance in Pennsylvania early in May, and leaves the country on the first smart frosts, generally in November. I have no doubt but many of them linger in the low woods and marshes of the southern states during winter.

This species is ten inches long, and fourteen inches in extent; bill, dusky red; cheeks and stripe over the eye, ash, over the lores and at the lower eyelid, white; iris of the eye, red; crown and whole upper parts, black, streaked with brown, the centre of each feather being black; wing-coverts, hazel brown, inclining to chestnut; quills, plain deep dusky; chin, white; throat, breast, and belly, orange brown; sides and vent, black, tipped with white; legs and feet, dull red brown; edge of the bend of the wing, white.

The female is about half an inch shorter, and differs from the male, in having the breast much paler; not of so bright a reddish brown; there is also more white on the chin and throat.

When seen, which is very rarely, these birds stand or run with the tail erect, which they frequently jerk upwards. They fly with the legs hanging, generally but a short distance; and the moment they alight, run off with great speed.

CLAPPER RAIL.—RALLUS CREPITANS.—PLATE LXII. FIG. 2.

Arct. Zool. No. 407.—*Lath. Syn.* iii. p. 229, No. 2.—*Ind. Orn.* p. 756, No. 2.—*Peale's Museum*, No. 4400.

RALLUS CREPITANS.—GMELIN.

Rallus crepitans, *Bonap. Synop.* p. 333.

THIS is a very numerous and well known species, inhabiting our whole Atlantic coast from New England to Florida. It is designated by different names, such as the mud hen, clapper rail, meadow clapper, big rail, &c, &c. Though occasionally found along the swampy shores and tide waters of our large rivers, its principal residence is in the salt marshes. It is a bird of passage, arriving on the Coast of New Jersey about the 20th of April, and retiring again late in September. I suspect that many of them winter in the marshes of Georgia and Florida, having heard them very numerous at the mouth of Savannah river in the month of February. Coasters and fishermen often hear them while on their migrations, in spring, generally a little before daybreak. The shores of New Jersey, within the beach, consisting of an immense extent of flat marsh, covered with a coarse reedy grass, and occasionally overflowed by the sea, by which it is also cut up into innumerable islands by narrow inlets, seem to be the favourite breeding place for these birds, as they are there acknowledged to be more than double in number to all other marsh fowl.

The clapper rail, or, as it is generally called, the mud hen, soon announces its arrival in the salt marshes, by its loud, harsh, and incessant cackling, which very much resembles that of a Guinea fowl. This noise is most general during the night, and is said to be always greatest before a storm. About the 20th of May, they generally commence laying and building at the same time; the first egg being usually dropt in a slight

cavity, lined with a little dry grass pulled for the purpose, which, as the number of the eggs increase to their usual complement, ten, is gradually added to, until it rises to the height of twelve inches or more,—doubtless to secure it from the rising of the tides. Over this the long salt grass is artfully arched, and knit at top, to conceal it from the view above; but this very circumstance enables the experienced egg-hunter to distinguish the spot at the distance of thirty or forty yards, though imperceptible to a common eye. The eggs are of a pale clay colour, sprinkled with small spots of dark red, and measure somewhat more than an inch and a half in length, by one inch in breadth, being rather obtuse at the small end. These eggs are exquisite eating, far surpassing those of the domestic hen. The height of laying is about the 1st of June, when the people of the neighbourhood go off to the marshes *an eggging*, as it is called. So abundant are the nests of this species, and so dexterous some persons at finding them, that one hundred dozen of eggs have been collected by one man in a day. At this time, the crows, the minx, and the foxes, come in for their share; but, not content with the eggs, those last often seize and devour the parents also. The bones, feathers, wings, &c., of the poor mud hen lie in heaps near the hole of the minx; by which circumstance, however, he himself is often detected and destroyed.

These birds are also subject to another calamity of a more extensive kind: After the greater part of the eggs are laid, there sometimes happen violent north-east tempests, that drive a great sea into the bay, covering the whole marshes; so that at such times the rail may be seen in hundreds, floating over the marsh in great distress; many escape to the mainland; and vast numbers perish. On an occasion of this kind I have seen, at one view, thousands in a single meadow, walking about exposed and bewildered, while the dead bodies of the females, who had perished on or near their nests, were strewed along the shore. This last circumstance proves how strong the ties of maternal affection is in these birds; for of the great numbers which I picked up and opened, not one male was to

be found among them ; all were females ! Such as had not yet begun to sit probably escaped. These disasters do not prevent the survivors from recommencing the work of laying and building anew ; and instances have occurred where their eggs have been twice destroyed by the sea ; and yet in two weeks the eggs and nests seemed as numerous as ever.

The young of the clapper rail very much resemble those of the Virginian rail, except in being larger. On the 10th of August, I examined one of these young clapper rails, caught among the reeds in the Delaware, and apparently about three weeks old ; it was covered with black down, with the exception of a spot of white on the auriculars, and a streak of the same along the side of the breast, belly, and fore part of the thigh ; the legs were of a blackish slate colour ; and the bill was marked with a spot of white near the point, and round the nostril. These run with great facility among the grass and reeds, and are taken with extreme difficulty.

The whole defence of this species seems to be in the nervous vigour of its limbs, and thin compressed form of its body, by which it is enabled to pass between the stalks of grass and reeds with great rapidity. There are also every where among the salt marshes covered ways, under the flat and matted grass, through which the rail makes its way like a rat, without a possibility of being seen. There is generally one or more of these from its nest to the water edge, by which it may escape unseen ; and sometimes, if closely pressed, it will dive to the other side of the pond, gut, or inlet, rising and disappearing again with the silence and celerity of thought. In smooth water it swims tolerably well, but not fast ; sitting high in the water, with its neck erect, and striking with great rapidity. When on shore, it runs with the neck extended, the tail erect, and frequently flirts up. On fair ground, they run nearly as fast as a man ; having myself, with great difficulty, caught some that were wing-broken. They have also the faculty of remaining under water for several minutes, clinging close, head downwards, by the roots of the grass. In a long stretch, they fly with great velocity, very much in the manner of a duck, with

extended neck, and generally low ; but such is their aversion to take wing, that you may traverse the marshes where there are hundreds of these birds, without seeing one of them ; nor will they flush until they have led the dog through numerous labyrinths, and he is on the very point of seizing them.

The food of the clapper rail consists of small shell-fish, particularly those of the snail form, so abundant in the marshes ; they also eat small crabs. Their flesh is dry, tastes sedgy, and will bear no comparison with that of the common rail. Early in October, they move off to the south ; and though, even in winter, a solitary instance of one may sometimes be seen, yet these are generally such as have been weak or wounded, and unable to perform the journey.

The clapper rail measures fourteen inches in length, and eighteen in extent ; the bill is two inches and a quarter long, slightly bent, pointed, grooved, and of a reddish brown colour ; iris of the eye, dark red ; nostril, oblong, pervious ; crown, neck, and back, black, streaked with dingy brown ; chin and line over the eye, brownish white ; auriculars, dusky ; neck before, and whole breast, of the same red brown as that of the preceding species ; wing-coverts, dark chestnut ; quill-feathers, plain dusky ; legs, reddish brown ; flanks and vent, black, tipped, or barred with white. The males and females are nearly alike.

The young birds of the first year have the upper parts of an olive brown, streaked with pale slate ; wings, pale brown olive ; chin and part of the throat, white ; breast, ash colour, tinged with brown ; legs and feet, a pale horn colour. Mr Pennant, and several other naturalists, appear to have taken their descriptions from these imperfect specimens, the clapper rail being altogether unknown in Europe.

I have never met with any of these birds in the interior at a distance from lakes or rivers. I have also made diligent enquiry for them along the shores of Lakes Champlain and Ontario, but without success.*

* Mr Ord " had an opportunity of verifying the conjecture of the author, as to the winter retreat of these birds ; he having found them to be extremely nu-

BLUE CRANE.—ARDEA CÆRULEA.—PLATE LXII.—FIG. 3.

Arct. Zool. No. 351.—*Catesby*, i. 76.—Le Crabier bleu. *Buff.* vii. 398.—*Sloan Jam.* ii. 315.—*Lath. Syn.* iii. p. 78. No. 45 ; p. 79, var. A.—*A. cærulescens*, *Turt. Syst.* p. 379.—*Planch. Enl.* 349.—*Peale's Museum*, No. 6782.

EGRETTA CÆRULEA.—JARDINE.

Ardea cærulea, *Linn. Syst.*—*Bonap. Synop.* p. 300.—*Ardea cærulescens*, *Wagl. Syst. Av.* No. 15.

IN mentioning this species in his translation of the *Systema Naturæ*, Turton has introduced what he calls two varieties, one from New Zealand, the other from Brazil ; both of which, if we may judge by their size and colour, appear to be entirely different and distinct species ; the first being green, with yellow legs, the last nearly one half less than the present.* By this loose mode of discrimination, the precision of science being altogether dispensed with, the whole tribe of cranes, herons, and bitterns, may be styled mere varieties of the genus *Ardea*. The same writer has still farther increased this confusion, by designating as a different species his bluish heron, (*A. cæru-*

merous in the marshes of the coast of Georgia, in the month of January. In such multitudes were they along the borders of the streams or passages which separate the sea-islands from the main, that their loud and incessant noise became quite as disgusting as the monotonous cackle of that intolerable nuisance the Guinea fowl.”—*Ord's Edit.*

* I have never traced this species in any Australian collection, and have little doubt that the authors of the assertion “that it is found there,” will turn out incorrect. This bird has all the characters of *Egretta* except the colour, and will certainly belong to that division, though it has been generally restricted to those of pure plumage. Bonaparte, in his *Nomenclature of Wilson*, says “the young birds of the year, before their first moult, are altogether pure white, and are therefore apt to be confounded with the young of *A. candidissima*.” Wagler in his excellent *Systema* confirms this, and mentions that, in their farther change, the upper parts are pale cinereous tinged with purple, beneath white, the quills partly black partly white, the tail cinereous. It is curious that in a species clothed with such rich and dark plumage the young should be pure white, the colour of the true *Egretta*, while in some of those of snowy covering, the young are a dusky greyish brown. If it can be mistaken in any state for *Egretta candidissima*, it will at once show where it ought to be placed.—ED.

lescens,) which agrees almost exactly with the present. Some of these mistakes may probably have originated from the figure of this bird given by Catesby, which appears to have been drawn and coloured, not from nature, but from the glimmering recollections of memory, and is extremely erroneous. These remarks are due to truth, and necessary to the elucidation of the history of this species, which seems to be but imperfectly known in Europe.

The blue heron is properly a native of the warmer climates of the United States, migrating from thence, at the approach of winter, to the tropical regions, being found in Cayenne, Jamaica, and Mexico. On the muddy shores of the Mississippi, from Baton Rouge downwards to New Orleans, these birds are frequently met with. In spring they extend their migrations as far north as New England, chiefly in the vicinity of the sea, becoming more rare as they advance to the north. On the sea beach of Cape May, I found a few of them breeding among the cedars, in company with the snowy heron, night heron, and green bittern. The figure and description of the present was taken from two of these, shot in the month of May, while in complete plumage. Their nests were composed of small sticks, built in the tops of the red cedars, and contained five eggs, of a light blue colour, and of somewhat a deeper tint than those of the night heron. Little or no difference could be perceived between the colours and markings of the male and female. This remark is applicable to almost the whole genus; though, from the circumstance of many of the yearling birds differing in plumage, they have been mistaken for females.

The blue heron, though in the northern states it be found chiefly in the neighbourhood of the ocean, probably on account of the greater temperature of the climate, is yet particularly fond of fresh water bogs, on the edges of the salt marsh. These it often frequents, wading about in search of tadpoles, lizards, various larvæ of winged insects, and mud worms. It moves actively about in search of these, sometimes making a run at its prey; and is often seen in company with the snowy heron,

figured in the same plate. Like this last, it is also very silent, intent, and watchful.

The genus *Ardea* is the most numerous of all the wading tribes, there being no less than ninety-six different species enumerated by late writers. These are again subdivided into particular families, each distinguished by a certain peculiarity. The cranes, by having the head bald; the storks, with the orbits naked; and the herons, with the middle claw pectinated. To this last belong the bitterns. Several of these are nocturnal birds, feeding only as the evening twilight commences, and reposing either among the long grass and reeds, or on tall trees, in sequestered places, during the day. What is very remarkable, these night wanderers often associate, during the breeding season, with the others, building their nests on the branches of the same tree; and, though differing so little in external form, feeding on nearly the same food, living and lodging in the same place, yet preserve their race, language, and manners, as perfectly distinct from those of their neighbours, as if each inhabited a separate quarter of the globe.

The blue heron is twenty-three inches in length, and three feet in extent; the bill is black, but from the nostril to the eye, in both mandibles, is of a rich light purplish blue; iris of the eye, gray; pupil, black, surrounded by a narrow silvery ring; eyelid, light blue; the whole head, and greater part of the neck, is of a deep purplish brown; from the crested hind head shoot three narrow pointed feathers that reach nearly six inches beyond the eye; lower part of the neck, breast, belly, and whole body, a deep slate colour, with lighter reflections; the back is covered with long, flat, and narrow feathers, some of which are ten inches long, and extend four inches beyond the tail; the breast is also ornamented with a number of these long slender feathers; legs, blackish green; inner side of the middle claw pectinated. The breast and sides of the rump, under the plumage, are clothed with a mass of yellowish white unelastic cottony down, similar to that in most of the tribe, the uses of which are not altogether understood. Male and female alike in colour.

The young birds of the first year are destitute of the purple plumage on the head and neck.

SNOWY HERON.—ARDEA CANDIDISSIMA.

PLATE LXII. FIG. 4.

*Lath. Sup. i. p. 230.—No. 3748.**EGRETTA CANDIDISSIMA.—BONAPARTE.**

Ardea candidissima, *Bonap. Synop.* p. 305.—*Monog. del gruppo Egretta.* Osserv. Sulla. 2d edit. del Reg. Anim. *Cuv.* p. 101.—*Wagl. Syst. av. i. No. 11.*

THIS elegant species inhabits the sea-coast of North America, from the Isthmus of Darien to the Gulf of St Lawrence, and is, in the United States, a bird of passage; arriving from the south early in April, and leaving the middle states again in October. Its general appearance, resembling so much that of the little egret of Europe, has, I doubt not, imposed on some of the naturalists of that country, as I confess it did on me.† From a more careful comparison, however, of both birds, I am satisfied that they are two entirely different and distinct species. These differences consist in the large flowing crest,

* This species has, like the others, been also confounded with a near ally; Wagler has unravelled the confusion in his *Systema*, and the Prince of Musignano in his Monograph on this group, as quoted above. To make the matter still clearer, I transcribe the Prince's observations on the *Nomenclature of Wilson*. "Two closely allied species of small white crested herons have much puzzled naturalists, who seem to have rivalled each other in confounding them, some by considering them as identical, others by making several nominal species, thus rendering their synonymy almost inextricable. The species are the *A. garzetta* of Europe, and the subject of the present remarks. The latter does not inhabit Europe, but is said to be found in Asia (which we are inclined to doubt), as frequently as on this continent, where it is widely extended. Wilson is free from all the above-mentioned errors, having, as usual, admirably established the species. He was, moreover, judicious in his selection of the English and Latin names; and it was, doubtless, after a careful investigation, that he selected the name of *candidissima*, which Mr Ord has changed to *A. Carolinensis*."—ED.

† "On the American continent the little egret is met with at New York and Long Island."—LATHAM, vol. iii. p. 90.

yellow feet, and singularly curled plumes of the back of the present; it is also nearly double the size of the European species.

The snowy heron seems particularly fond of the salt marshes during summer, seldom penetrating far inland. Its white plumage renders it a very conspicuous object, either while on wing, or while wading the meadows or marshes. Its food consists of those small crabs usually called *fiddlers*, mud worms, snails, frogs, and lizards. It also feeds on the seeds of some species of nymphæ, and of several other aquatic plants.

On the 19th of May I visited an extensive breeding place of the snowy heron, among the red cedars of Summers's Beach, on the coast of Cape May. The situation was very sequestered, bounded on the land side by a fresh water marsh or pond, and sheltered from the Atlantic by ranges of sand hills. The cedars, though not high, were so closely crowded together as to render it difficult to penetrate through among them. Some trees contained three, others four nests, built wholly of sticks. Each had in it three eggs, of a pale greenish blue colour, and measuring an inch and three quarters in length, by an inch and a quarter in thickness. Forty or fifty of these eggs were cooked, and found to be well tasted; the white was of a bluish tint, and almost transparent, though boiled for a considerable time; the yelk very small in quantity. The birds rose in vast numbers, but without clamour, alighting on the tops of the trees around, and watching the result in silent anxiety. Among them were numbers of the night heron, and two or three purple-headed herons. Great quantities of egg shells lay scattered under the trees, occasioned by the depredations of the crows, who were continually hovering about the place. On one of the nests I found the dead body of the bird itself, half devoured by the hawks, crows, or gulls. She had probably perished in defence of her eggs.

The snowy heron is seen at all times during summer among the salt marshes, watching and searching for food, or passing, sometimes in flocks, from one part of the bay to the other. They often make excursions up the rivers and inlets, but return regularly in the evening to the red cedars on the beach

to roost. I found these birds on the Mississippi, early in June, as far up as Fort Adams, roaming about among the creeks and inundated woods.

The length of this species is two feet one inch; extent, three feet two inches; the bill is four inches and a quarter long, and grooved; the space from the nostril to the eye, orange yellow, the rest of the bill black; irides, vivid orange; the whole plumage is of a snowy whiteness; the head is largely crested with loose unwebbed feathers, nearly four inches in length; another tuft of the same covers the breast; but the most distinguished ornament of this bird is a bunch of long silky plumes, proceeding from the shoulders, covering the whole back, and extending beyond the tail; the shafts of these are six or seven inches long, extremely elastic, tapering to the extremities, and thinly set with long, slender, bending threads or fibres, easily agitated by the slightest motion of the air; these shafts curl upwards at the ends. When the bird is irritated, and erects those airy plumes, they have a very elegant appearance: the legs and naked part of the thighs are black; the feet, bright yellow; claws, black, the middle one pectinated.

The female can scarcely be distinguished by her plumage, having not only the crest, but all the ornaments of the male, though not quite so long and flowing.

The young birds of the first season are entirely destitute of the long plumes of the breast and back; but, as all those that have been examined in spring are found crested and ornamented as above, they doubtless receive their full dress on the first moulting. Those shot in October measured twenty-two inches in length, by thirty-four in extent; the crest was beginning to form; the legs, yellowish green, daubed with black; the feet, greenish yellow; the lower mandible white at the base; the wings, when shut, nearly of a length with the tail, which is even at the end.

The little egret, or European species, is said by Latham and Turton to be nearly a foot in length; Bewick observes, that it rarely exceeds a foot and a half; has a much shorter crest, with two long feathers; the feet are black; and the long plu-

mage of the back, instead of turning up at the extremity, falls over the rump.

The young of both these birds are generally very fat, and esteemed by some people as excellent eating.

ROSEATE SPOON-BILL.—PLATALEA AJAJA.

PLATE LXIII. FIG. 1.

Arct. Zool. No. 338.—*Lath. Syn.* iii. p. 16, No. 2.—*La Spatule* couleur de rose.

Briss. Orn. v. p. 3562. pl. 30; *Buff.* vii. 456, pl. col. 116.—*Peale's Museum*, No. 3553.

PLATALEA AJAJA.—LINNÆUS.*

Platalea ajaja. *Bonap. Synop.* p. 346.

THIS stately and elegant bird inhabits the sea-shores of America, from Brazil to Georgia. It also appears to wander up the Mississippi sometimes in summer, the specimen from which the figure in the plate was drawn, having been sent me from the neighbourhood of Natchez, in excellent order; for which favour I am indebted to the family of my late benevolent and scientific friend, William Dunbar, Esq., of that territory. It is now deposited in Mr Peale's Museum. This species, however, is rarely seen to the northward of the Alatomaha river; and even along the peninsula of Florida is a scarce bird.

* This group, remarkable for the curious developement of the bill, join a number of characters in common with the herons and tantali. They live during the breeding season in communities, and feed in twilight; the food is fish, and aquatic animals, and they are said to search in the mud with their bills in the manner of ducks, where the soft and closely nervous substance enables them to detect the smaller insects. To look at the bill in a stuffed or preserved state, it is hard and horny, but when living it is remarkably tender, and has rather a fleshy and soft look and feel. The common British species is easily tamed, and, like most of its nearer allies, eats voraciously; fish will support them, and even porridge, with a little raw meat; the gape is very wide, and substances are swallowed in immediate succession, taken always crosswise, and then tossed over. The trachea in the male performs a single convolution in the sternum. The genus contains three or four species: that of Europe, found also in India; a species from Africa very near *P. ajaja*, peculiar to America, and the *Spatule huppée* of Sonnerat, which Mons. Temminck thinks distinct. In all, the young do not attain full plumage till after the first moult.—ED.

In Jamaica, several other of the West India islands, Mexico and Guiana, it is more common, but confines itself chiefly to the sea-shore and the mouths of rivers. Captain Henderson says, it is frequently seen at Honduras. It wades about in quest of shell fish, marine insects, small crabs, and fish. In pursuit of these, it occasionally swims and dives.

There are few facts on record relative to this very singular bird. It is said that the young are of a blackish chestnut the first year; of the roseate colour of the present the second year; and of a deep scarlet the third.* Having never been so fortunate as to meet with them in their native wilds, I regret my present inability to throw any farther light on their history and manners. These, it is probable, may resemble, in many respects, those of the European species, the white spoon-bill once so common in Holland.† To atone for this deficiency, I have endeavoured faithfully to delineate the figure of this American species, and may, perhaps, resume the subject in some future part of the present work.

The roseate spoon-bill, now before us, measured two feet six inches in length, and near four feet in extent; the bill was six inches and a half long from the corner of the mouth, seven from its upper base, two inches over at its greatest width, and three quarters of an inch where narrowest; of a black colour for half its length, and covered with hard scaly protuberances, like the edges of oyster-shells; these are of a whitish tint, stained with red; the nostrils are oblong, and placed in the centre of the upper mandible; from the lower end of each there runs a deep groove along each side of the mandible, and about a quarter of an inch from its edge; whole crown and chin, bare of plumage, and covered with a greenish skin; that below the under man-

* LATHAM.

† The European species breeds on trees by the sea side; lays three or four white eggs, powdered with a few pale red spots, and about the size of those of a hen; are very noisy during breeding time; feed on fish, mussels, &c., which, like the bald eagle, they frequently take from other birds, frightening them by clattering their bill: they are also said to eat grass, weeds, and roots of reeds: they are migratory; their flesh reported to savour of that of a goose; the young are reckoned good food.

dible, dilatable like those of the genus *pelicanus*, space round the eye, orange; irides, blood red; cheeks and hind head, a bare black skin; neck, long, covered with short white feathers, some of which, on the upper part of the neck, are tipped with crimson; breast, white, the sides of which are tinged with a brown burnt colour; from the upper part of the breast proceeds a long tuft of fine hair-like plumage, of a pale rose colour; back, white, slightly tinged with brownish; wings, a pale wild rose colour, the shafts black; the shoulders of the wings are covered with long hairy plumage, of a deep and splendid carmine; upper and lower tail-coverts, the same rich red; belly, rosy; rump, paler; tail, equal at the end, consisting of twelve feathers of a bright brownish orange, the shafts reddish; legs and naked part of the thighs, dark dirty red; feet, half webbed; toes, very long, particularly the hind one. The upper part of the neck had the plumage partly worn away, as if occasioned by resting it on the back, in the manner of the ibis. The skin on the crown is a little wrinkled; the inside of the wing a much richer red than the outer.

AMERICAN AVOSET.—RECURVIROSTRA AMERICANA.

PLATE LXIII. FIG. 26.

Arct. Zool. No. 421.—*Lath. Syn.* iii. p. 295, No. 2.—*Peale's Museum*,
No. 4250.

RECURVIROSTRA AMERICANA.—LINNÆUS.*

Avocette isabelle, *Recurvirostra Americana*, *Temm. Man. d'Orn.* ii. p. 594.—

Recurvirostra Americana, *Bonap. Synop.* p. 345.

THIS species, from its perpetual clamour and flippancy of tongue, is called, by the inhabitants of Cape May, the lawyer;

* This curious genus contains four known species; perhaps, ere long, another may be made out. They nearly resemble each other, and all possess the turned-up bill. In their manners, they assimilate generally with the totani, feed like them, and are very clamorous when their nest is approached. Like them, also, though possessed of partially webbed feet, they do not swim or take the water freely, except when wading, or by compulsion.—ED.

the comparison, however, reaches no farther ; for our lawyer is simple, timid, and perfectly inoffensive.

In describing the long-legged avoset of this volume, the similarity between that and the present was taken notice of. This resemblance extends to every thing but their colour. I found both these birds associated together on the salt marshes of New Jersey, on the 20th of May. They were then breeding. Individuals of the present species were few in respect to the other. They flew around the shallow pools exactly in the manner of the long-legs, uttering the like sharp note of *click, click, click*, alighting on the marsh or in the water indiscriminately, fluttering their loose wings, and shaking their half-bent legs, as if ready to tumble over, keeping up a continual yelping note. They were, however, rather more shy, and kept at a greater distance. One which I wounded attempted repeatedly to dive ; but the water was too shallow to permit him to do this with facility. The nest was built among the thick tufts of grass, at a small distance from one of these pools. It was composed of small twigs of a sea-side shrub, dry grass, sea weed, &c., raised to the height of several inches. The eggs were four, of a dull olive colour, marked with large irregular blotches of black, and with others of a fainter tint.

This species arrives on the coast of Cape May late in April ; rears its young, and departs again to the south early in October. While here, it almost constantly frequents the shallow pools in the salt marshes ; wading about, often to the belly, in search of food ; viz. marine worms, snails, and various insects that abound among the soft muddy bottoms of the pools.

The male of this species is eighteen inches and a half long, and two feet and a half in extent ; the bill is black, four inches in length, flat above, the general curvature upwards, except at the extremity, where it bends slightly down, ending in an extremely fine point ; irides, reddish hazel ; whole head, neck, and breast, a light sorrel colour ; round the eye, and on the chin, nearly white ; upper part of the back and wings, black ; scapulars, and almost the whole back, white, though generally

concealed by the black of the upper parts; belly, vent, and thighs, pure white; tail, equal at the end, white, very slightly tinged with cinereous; tertials, dusky brown; greater coverts, tipped with white; secondaries, white on their outer edges, and whole inner vanes; rest of the wing, deep black; naked part of the thighs, two and a half inches; legs, four inches, both of a very pale light blue, exactly formed, thinned, and netted, like those of the long-legs; feet, half webbed; the outer membrane somewhat the broadest; there is a very slight hind toe, which, claw and all, does not exceed a quarter of an inch in length. In these two latter circumstances alone it differs from the long-legs, but is in every other strikingly alike.

The female was two inches shorter, and three less in extent; the head and neck a much paler rufous, fading almost to white on the breast, and separated from the black of the back by a broader band of white; the bill was three inches and a half long; the leg half an inch shorter; in every other respect marked as the male. She contained a great number of eggs, some of them nearly ready for exclusion. The stomach was filled with small snails, periwinkle shell fish, some kind of mossy vegetable food, and a number of aquatic insects. The intestines were infested with tape-worms, and a number of smaller bot-like worms, some of which wallowed in the cavity of the abdomen.

In Mr Peale's collection, there is one of this same species, said to have been brought from New Holland, differing little in the markings of its plumage from our own. The red brown on the neck does not descend so far, scarcely occupying any of the breast; it is also somewhat less.

In every stuffed and dried specimen of these birds which I have examined, the true form and flexure of the bill is altogether deranged, being naturally of a very tender and delicate substance.*

* Mr Ord farther observes, "it is remarkable, that in the Atlantic states this species invariably affects the neighbourhood of the ocean; we never having known an instance of its having been seen in the interior; and yet Captain Lewis met

RUDDY PLOVER.—CHARADRIUS RUBIDUS.—PLATE LXIII.

FIG. 3.

Arct. Zool. No. 404.—*Lath. Syn.* iii. p. 195, No. 2.—*Turt. Syst.* p. 415.

CALIDRIS ARENARIA.—ILLIGER.

Tringa arenaria. *Bonap. Synop.* p. 320.

THIS bird is frequently found in company with the sanderling, which, except in colour, it very much resembles. It is generally seen on the sea-coast of New Jersey in May and October, on its way to and from its breeding place in the north. It runs with great activity along the edge of the flowing or retreating waves on the sands, picking up the small bivalve shell-fish, which supplies so many multitudes of the plover and sandpiper tribes.

I should not be surprised if the present species turn out hereafter to be the sanderling itself, in a different dress. Of many scores which I examined, scarce two were alike; in some the plumage of the back was almost plain, in others the black plumage was just shooting out. This was in the month of October. Naturalists, however, have considered it as a separate species; but have given us no farther particulars than that, “in Hudson’s Bay, it is known by the name of *Mistchaychekiskaweshish*,”*—a piece of information certainly very instructive.

The ruddy plover is eight inches long, and fifteen in extent; the bill is black, an inch long, and straight; sides of the neck and whole upper parts, speckled largely with white, black, and ferruginous; the feathers being centred with black, tipped with white, and edged with ferruginous, giving the bird a very motley appearance; belly and vent, pure white; wing-quills, black, crossed with a band of white; lesser coverts, whitish,

with this bird at the ponds in the vicinity of the Falls of the Missouri. That it was our species I had ocular evidence by a skin brought by Captain Lewis himself, and presented, among other specimens of natural history, to the Philadelphia Museum.—See *History of Lewis and Clark’s Expedition*, vol. ii. p. 343.

* LATHAM.

centred with pale olive, the first two or three rows black; two middle tail-feathers, black; the rest, pale cinereous, edged with white; legs and feet, black; toes, bordered with a very narrow membrane. On dissection, both males and females varied in their colours and markings.

SEMPALMATED SANDPIPER.—*TRINGA SEMIPALMATA*.

PLATE LXIII. FIG. 4.

Peale's Museum, No. 4025.

TRINGA SEMIPALMATA.—WILSON.

Tringa semipalmata. Bonap. Synop. p. 316.

THIS is one of the smallest of its tribe, and seems to have been entirely overlooked, or confounded with another which it much resembles, (*Tringa pusilla*,) and with whom it is often found associated.

Its half-webbed feet, however, are sufficient marks of distinction between the two. It arrives and departs with the preceding species; flies in flocks with the stints, purres, and a few others; and is sometimes seen at a considerable distance from the sea, on the sandy shores of our fresh-water lakes. On the 23d of September, I met with a small flock of these birds in Burlington Bay, on Lake Champlain. They are numerous along the sea-shores of New Jersey, but retire to the south on the approach of cold weather.

This species is six inches long, and twelve in extent; the bill is black, an inch long, and very slightly bent; crown and body above, dusky brown, the plumage edged with ferruginous, and tipped with white; tail and wings, nearly of a length; sides of the rump, white; rump and tail-coverts, black; wing-quills, dusky black, shafted, and banded with white, much in the manner of the least snipe; over the eye a line of white; lesser coverts, tipped with white; legs and feet, blackish ash, the latter half webbed. Males and females alike in colour.

These birds varied greatly in their size, some being scarcely five inches and a half in length, and the bill not more than

three quarters; others measured nearly seven inches in the whole length, and the bill upwards of an inch. In their general appearance, they greatly resemble the stints or least snipe; but unless we allow that the same species may sometimes have the toes half webbed, and sometimes divided to the origin,—and this not in one or two solitary instances, but in whole flocks, which would be extraordinary indeed,—we cannot avoid classing this as a new and distinct species.

LOUISIANA HERON.—ARDEA LUDOVICIANA.

PLATE LXIV. FIG. 1.

Peale's Museum, No. 3750.

ARDEA LUDOVICIANA.—WILSON.

Ardea leucogaster, *Ord's Reprint*, Part viii. p. 1.—*Ardea Ludoviciana*, *Bonap. Synop.* p. 304.

THIS is a rare and delicately formed species; occasionally found on the swampy river shores of South Carolina, but more frequently along the borders of the Mississippi, particularly below New Orleans. In each of these places it is migratory; and in the latter, as I have been informed, builds its nest on trees, amidst the inundated woods. Its manners correspond very much with those of the Blue Heron. It is quick in all its motions, darting about after its prey with surprising agility. Small fish, frogs, lizards, tadpoles, and various aquatic insects, constitute its principal food.

There is a bird described by Latham in his *General Synopsis*, vol. iii. p. 88. called the *Demi Egret*,* which, from the account there given, seems to approach near to the present species. It is said to inhabit Cayenne.

Length of the Louisiana heron, from the point of the bill to the extremity of the tail, twenty-three inches; the long hair-like plumage of the rump and lower part of the back extends

* See also Buffon, vol. vii. p. 378.

several inches farther; the bill is remarkably long, measuring full five inches, of a yellowish green at the base, black towards the point, and very sharp; irides, yellow; chin and throat, white, dotted with ferruginous and some blue; the rest of the neck is of a light vinous purple, intermixed on the lower part next the breast with dark slate-coloured plumage; the whole feathers of the neck are long, narrow, and pointed; head, crested, consisting first of a number of long narrow purple feathers, and under these seven or eight pendent ones, of a pure white, and twice the length of the former; upper part of the back and wings, light slate; lower part of the back and rump, white, but concealed by a mass of long unwebbed hair-like plumage, that falls over the tail and tips of the wings, extending three inches beyond them; these plumes are of a dirty purplish brown at the base, and lighten towards the extremities to a pale cream colour; the tail is even at the tip, rather longer than the wings, and of a fine slate; the legs and naked thighs, greenish yellow; middle claw pectinated; whole lower parts pure white. Male and female alike in plumage, both being crested.

PIED OYSTER-CATCHER.—HÆMATOPUS OSTRALEGUS.

PLATE LXIV. FIG. 2.

Arct. Zool. No. 406.—*Catesby*, i. 85.—*Bewick*, ii. 23.—*Peale's Museum*, No. 4258.

HÆMATOPUS PALLIATUS?—TEMMINCK.*

Hæmatopus ostralegus, *Bonap. Synop.* p. 300.—*Hæmatopus palliatus*? *Jard. and Selby, Illust. Ornith.* Vol. iii. Plate 125.

THIS singular species, although nowhere numerous, inhabits almost every sea-shore, both on the new and old continent,

* The oyster-catchers of Europe and America are said, by Temminck and Bonaparte, to be identical. Such also was the opinion of most ornithologists, and my own, until a closer comparison of American specimens with British showed a distinction. There is another, however, with which the American bird may be confounded, and I cannot decidedly say that it is distinct, the *H. palliatus*, Temm.

but is never found inland. It is the only one of its genus hitherto discovered, and, from the conformation of some of its

I have not seen that species; but from the description of the upper parts being greyish brown, it must either be distinct, or the young state of the North American bird. My specimens of the latter are of the purest black and white.

Bonaparte, in his *Nomenclature*, says, the species is common to both continents; and mentions that he has specimens before him, from each country, decidedly alike. From this circumstance, I should be inclined to give two species to North America, as the distinctions between them are so great as it would be impossible to overlook, on an examination such as he was likely to give.

The following are the distinctive marks of the species in my possession:—The bill appears generally to be more slender; the quills want the white band running in a slanting direction across, being in the American specimen entirely black; the secondaries in the American, except the first, are pure white; in the British specimen, each, except the three or four last, have a black mark near the tips, which decrease in size as they proceed. The whole interior surface of the wing is pure white; in the other it is black, except where the white secondaries appear. In the British bird, the tail-coverts and rump are pure white, the latter running upon the back, until it is hid by the scapulary and back feathers. In the American, the tail-coverts only are white, forming, as it were, a band of that colour, interrupted by the black tip of the tail; the whole rump and lower part of the back, black.

If that before us prove distinct, this genus will contain five species, distributed over the whole world, and allied so closely, that every member is alike, with a different distribution only of black and white to distinguish them. They are, the common European bird, perhaps also American, *H. ostralegus*; the black oyster-catcher, *H. niger*, found in Australia and Africa; *H. palliatus*, Temm., South American, and which may turn out to be the immature state of the species we have mentioned; and the *Ostralega leucopus* of Lesson, found on the Malowine Isles, and remarkable in having white legs and feet. The species in my possession may stand as the fifth, under the name of *H. articus*.*

As they are allied in form, so they are in habit. They frequent low sandy beaches, feeding on the shell-fish during the recess of the tide, and resting while it flows. The oyster-catcher of Europe is to be found on all the sandy British coasts in immense abundance. All those which I have observed breeding, have chosen low rocky coasts, and deposit their eggs on some shelf, or ledge, merely baring the surface from any moss or other substance covering the rock. When approached, the parents fly round, uttering with great vehemence their clamo-

* When this note was written, I had not seen the elaborate review of Cuvier's *Regne Animale* by the Prince of Musignano. He is aware that the North American and European species are distinct, and mentions that the more northern regions produce an additional one; I believe the bird figured by Wilson, and the skins in my possession, will prove to be this, and may stand as I have named it above. That ornithologist also gives as a principal character to *H. palliatus*, that the upper parts are "*di un color fosco invece di nero*," at variance with the pure black and white of our specimens.—Ed.

parts, one might almost be led by fancy to suppose, that it had borrowed the eye of the pheasant, the legs and feet of the bustard, and the bill of the woodpecker.

The oyster-catcher frequents the sandy sea-beach of New Jersey, and other parts of our Atlantic coast in summer, in small parties of two or three pairs together. They are extremely shy, and, except about the season of breeding, will seldom permit a person to approach within gunshot. They walk along the shore in a watchful, stately manner, at times probing it with their long wedge-like bills, in search of small shell-fish. This appears evident, on examining the hard sands where they usually resort, which are found thickly perforated with oblong holes, two or three inches in depth. The small crabs called fiddlers, that burrow in the mud at the bottom of inlets, are frequently the prey of the oyster-catcher; as are mussels, spout-fish, and a variety of other shell-fish and sea insects with which those shores abound.

The principal food, however, of this bird, according to European writers, and that from which it derives its name, is the oyster, which it is said to watch for, and snatch suddenly. I have never found them breeding on a sandy beach, though I have observed these birds for the last ten years, in a situation fitted in every way for that kind of incubation, and have known them retire regularly to a distance of about six or seven miles (a more populous quarter), where they had the advantage of a ledge of insulated rocks bounding the coast. A great many, both old and young birds, perhaps among the latter those of a late brood, are always to be found on these coasts, and enliven the monotony of an extensive sand beach, with their clean and lively appearance, and their shrill notes. As the young begin to assemble, the flocks increase; by the month of August, they consist of many thousands; and at full tide, they may be seen like an extensive black line, at the distance of miles. They remain at rest until about half tide, when a general motion is made, and the line may be seen broken, as the different parties advance close to the water edge. After this they keep pace with the reflux, until the feeding banks begin to be uncovered, of which they seem to have an instinctive knowledge, when they leave their resting-place in small troops, taking day after day the same course. They are difficult to approach, but when one is shot, the flock will hover over it for some time, without heeding the intruder. During flight they assume the \triangleright wedge shape, like ducks. They feed at night, when the tide is suitable, and are often very noisy. Mussels, and smaller shell-fish, crabs, &c. &c. are their most common food.—ED.

from the shells, whenever it surprises them sufficiently open. In search of these, it is reported that it often frequents the oyster beds, looking out for the slightest opening through which it may attack its unwary prey. For this purpose the form of its bill seems very fitly calculated. Yet the truth of these accounts are doubted by the inhabitants of Egg Harbour, and other parts of our coast, who positively assert, that it never haunts such places, but confines itself almost solely to the sands; and this opinion I am inclined to believe correct, having myself uniformly found these birds on the smooth beach bordering the ocean, and on the higher, dry, and level sands, just beyond the reach of the summer tides. On this last situation, where the dry flats are thickly interspersed with drifted shells, I have repeatedly found their nests, between the middle and 25th of May. The nest itself is a slight hollow in the sand, containing three eggs, somewhat less than those of a hen, and nearly of the same shape, of a bluish cream colour, marked with large roundish spots of black, and others of a fainter tint. In some, the ground cream colour is destitute of the bluish tint, the blotches larger, and of a deep brown. The young are hatched about the 25th of May, and sometimes earlier, having myself caught them running along the beach about that period. They are at first covered with down of a greyish colour, very much resembling that of the sand, and marked with a streak of brownish black on the back, rump, and neck, the breast being dusky, where, in the old ones, it is black. The bill is at that age slightly bent downwards at the tip, where, like most other young birds, it has a hard protuberance that assists them in breaking the shell; but in a few days afterwards this falls off.* These run along the shore with great ease and swiftness.

* Latham observes, that the young are said to be hatched in about three weeks; and though they are wild when in flocks, yet are easily brought up tame, if taken young. "I have known them," says he, "to be thus kept for a long time, frequenting the ponds and ditches during the day, attending the ducks and other poultry to shelter of nights, and not unfrequently to come up of themselves as evening approaches."—*General Synopsis*, vol. iii. p. 220.

The female sits on her eggs only during the night, or in remarkably cold and rainy weather; at other times the heat of the sun and of the sand, which is sometimes great, renders incubation unnecessary. But although this is the case, she is not deficient in care or affection. She watches the spot with an attachment, anxiety, and perseverance, that are really surprising, till the time arrives when her little offspring burst their prisons, and follow the guiding voice of their mother. When there is appearance of danger, they squat on the sand, from which they are with difficulty distinguished, while the parents make large circuits around the intruder, alighting sometimes on this hand, sometimes on that, uttering repeated cries, and practising the common affectionate stratagem of counterfeited lameness, to allure him from their young.

These birds run and fly with great vigour and velocity. Their note is a loud and shrill whistling *wheep-wheep-wheo*, smartly uttered. A flock will often rise, descend, and wheel in air with remarkable regularity, as if drilled to the business, the glittering white of their wings at such times being very conspicuous. They are more remarkable for this on their first arrival in the spring. Some time ago, I received a stuffed specimen of the oyster-catcher, from a gentleman of Boston, an experienced sportsman, who, nevertheless, was unacquainted with this bird. He informed me, that two very old men to whom it was shown, called it a *hagdel*. He adds, "it was shot from a flock, which was first discovered on the beach near the entrance of Boston Harbour. On the approach of the gunner, they rose, and instantly formed in line, like a corps of troops, and advanced in perfect order, keeping well dressed. They made a number of circuits in the air previous to being shot at, but wheeled in line; and the man who fired into the flock, observed that all their evolutions were like a regularly organized military company."

The oyster-catcher will not only take to the water when wounded, but can also swim and dive well. This fact I can assert from my own observation, the exploits of one of them in this way having nearly cost me my life. On the sea-beach

of Cape May, not far from a deep and rapid inlet, I broke the wing of one of these birds, and being without a dog, instantly pursued it towards the inlet, which it made for with great rapidity. We both plunged in nearly at the same instant; but the bird eluded my grasp, and I sunk beyond my depth; it was not until this moment that I recollected having carried in my gun along with me. On rising to the surface, I found the bird had dived, and a strong ebb current was carrying me fast towards the ocean, encumbered with a gun and all my shooting apparatus; I was compelled to relinquish my bird, and to make for the shore, with considerable mortification, and the total destruction of the contents of my powder-horn. The wounded bird afterwards rose, and swam with great buoyancy out among the breakers.

On the same day, I shot and examined three individuals of this species, two of which measured each eighteen inches in length, and thirty-five inches in extent; the other was somewhat less. The bills varied in length, measuring three inches and three quarters, three and a half, and three and a quarter, thinly compressed at the point, very much like that of the woodpecker tribe, but remarkably narrowed near the base where the nostrils are placed, probably that it may work with more freedom in the sand. This instrument for two-thirds of its length towards the point, was evidently much worn by digging; its colour, a rich orange scarlet, somewhat yellowish near the tip; eye, large; orbits, of the same bright scarlet as the bill; irides, brilliant yellow; pupil, small, bluish black; under the eye, is a small spot of white, and a large bed of the same on the wing-coverts; head, neck, scapulars, rump, wing-quills, and tail, black; several of the primaries are marked on the outer vanes with a slanting band of white; secondaries, white, part of them tipped with black; the whole lower parts of the body, sides of the rump, tail-coverts, and that portion of the tail which they cover, are pure white; the wings, when shut, cover the whole white plumage of the back and rump; legs and naked part of the thighs, pale red; feet, three-toed, the outer joined to the

middle by a broad and strong membrane, and each bordered with a rough warty edge; the soles of the feet are defended from the hard sand and shells by a remarkably thick and callous warty skin.

On opening these birds, the smallest of the three was found to be a male; the gullet widened into a kind of crop; the stomach, or gizzard, contained fragments of shell-fish, pieces of crabs, and of the great king crab, with some dark brown marine insects. The flesh was remarkably firm and muscular, the skull, thick and strong, intended, no doubt, as in the woodpecker tribe, for the security of the brain from the violent concussions it might receive while the bird was engaged in digging. The female and young birds have the back and scapulars of a sooty brownish olive.

This species is found as far south as Cayenne and Surinam. Dampier met with it on the coast of New Holland; the British circumnavigators also saw it on Van Diemen's Land, Terra del Fuego, and New Zealand.

WHOOPING CRANE—ARDEA AMERICANA.

PLATE LXIV. FIG. 3. MALE.

Arct. Zool. No. 339.—*Catesby*, i. 75.—*Lath.* iii. p. 42.—*La Grue d'Amerique*,
Pl. Enl. 889.—*Peale's Museum*, No. 3704.

GRUS AMERICANA.—TEMMINCK.*

Grus Americana, *Bonap. Synop.* p. 302.—*North. Zool.* ii. p. 372.

THIS is the tallest and most stately species of all the feathered tribes of the United States; the watchful inhabitant of ex-

* This crane has also suffered under the too general confusion of names, so that it becomes somewhat difficult to determine with precision that which should by priority be allotted to it. It is an extra European species, and seems to be the Asiatic bird generally known under the name of *G. gigantea*, Pall. Temminck, however, says that Gmelin changed this name from the original one of *G. leucogeranos*, Pall., and has figured and described it as such in the *Planches Colorées*.

tensive salt marshes, desolate swamps, and open morasses in the neighbourhood of the sea. Its migrations are regular, and of the most extensive kind, reaching from the shores and inundated tracts of South America to the arctic circle. In these immense periodical journeys, they pass at such a prodigious height in the air as to be seldom observed. They have, however, their resting stages on the route to and from their usual breeding places, the regions of the north. A few sometimes make their appearance in the marshes of Cape May, in December, particularly on and near Egg Island, where they are known by the name of storks. The younger birds are easily distinguished from the rest by the brownness of their plumage.

It appears to extend over Asia to China, and specimens have been brought from Japan. Are they all one species?

America will also possess another majestic crane, *Grus Canadensis*, Temm. inhabiting the northern parts, but not commonly found in the middle states; it is met with in summer in all parts of the fur countries to the shores of the Arctic Sea.

The birds of this genus were formerly arranged among the herons, to which they bear a certain alliance, but were, by Pallas, with propriety separated, and form a very natural division in a great class. They are at once distinguished from *Ardea* by the bald head, and the broad, waving, and pendulous form of the greater coverts. Some extend over every part of the world, but the group is, notwithstanding, limited to only a few species. They are majestic in appearance, and possess a strong and powerful flight, performing very long migrations, preparatory to which they assemble, and, as it were, exercise themselves before starting. They are social, and feed and migrate in troops. Major Long, speaking of the migrations of the second American species *G. Canadensis*, says, "They afford one of the most beautiful instances of animal motion we can anywhere meet with. They fly at a great height, and wheeling in circles, appear to rest without effort on the surface of an aerial current, by whose eddies they are borne about in an endless series of revolutions; each individual describes a large circle in the air, independently of his associates, and uttering loud, distinct, and repeated cries. They continue thus to wing their flight upwards, gradually receding from the earth, until they become mere specks upon the sight, and finally altogether disappear, leaving only the discordant music of their concert to fall faintly on the ear, exploring

'Heavens not its own, and worlds unknown before.' "

The *Grus Canadensis*, or sand-hill crane, will be figured and described by the Prince of Musignano in the remaining volumes of his continuation, which we hope ere long to receive.—Ed.

Some linger in these marshes the whole winter, setting out north about the time the ice breaks up. During their stay, they wander along the marsh and muddy flats of the sea-shore in search of marine worms, sailing occasionally from place to place, with a low and heavy flight, a little above the surface; and have at such times a very formidable appearance. At times they utter a loud, clear, and piercing cry, which may be heard at the distance of two miles. They have also various modulations of this singular note, from the peculiarity of which they derive their name. When wounded, they attack the gunner, or his dog, with great resolution; and have been known to drive their sharp and formidable bill, at one stroke, through a man's hand.

During winter, they are frequently seen in the low grounds and rice plantations of the southern states, in search of grain and insects. On the 10th of February, I met with several near the Waccamau river, in South Carolina; I also saw a flock at the ponds near Louisville, Kentucky, on the 20th of March. They are extremely shy and vigilant, so that it is with the greatest difficulty they can be shot. They sometimes rise in the air spirally to a great height, the mingled noise of their screaming, even when they are almost beyond the reach of sight, resembling that of a pack of hounds in full cry. On these occasions, they fly around in large circles, as if reconnoitring the country to a vast extent for a fresh quarter to feed in. Their flesh is said to be well tasted, nowise savouring of fish. They swallow mice, moles, rats, &c., with great avidity. They build their nests on the ground, in tussocks of long grass, amidst solitary swamps, raise it to more than a foot in height, and lay two pale blue eggs, spotted with brown. These are much larger, and of a more lengthened form than those of the common hen.

The cranes are distinguished from the other families of their genus by the comparative baldness of their heads, the broad flag of plumage projecting over the tail, and in general by their superior size. They also differ in their internal organi-

zation from all the rest of the heron tribe, particularly in the conformation of the windpipe, which enters the breast-bone in a cavity fitted to receive it, and after several turns goes out again at the same place, and thence descends to the lungs. Unlike the herons, they have not the inner side of the middle claw pectinated, and, in this species at least, the hind toe is short, scarcely reaching the ground.

The vast marshy flats of Siberia are inhabited by a crane very much resembling the present, with the exception of the bill and legs being red; like those of the present, the year old birds are said also to be tawny.

It is highly probable that the species described by naturalists as the brown crane (*Ardea Canadensis*), is nothing more than the young of the whooping crane, their descriptions exactly corresponding with the latter. In a flock of six or eight, three or four are usually of that tawny or reddish brown tint on the back, scapulars, and wing-coverts; but are evidently yearlings of the whooping crane, and differ in nothing but in that and size from the others. They are generally five or six inches shorter, and the primaries are of a brownish cast.

The whooping crane is four feet six inches in length, from the point of the bill to the end of the tail, and, when standing erect, measures nearly five feet; the bill is six inches long, and an inch and a half in thickness, straight, extremely sharp, and of a yellowish brown colour; the irides are yellow; the forehead, whole crown, and cheeks, are covered with a warty skin, thinly interspersed with black hairs; these become more thickly set towards the base of the bill; the hind head is of an ash colour; the rest of the plumage, pure white, the primaries excepted, which are black; from the root of each wing rise numerous large flowing feathers, projecting over the tail and tips of the wings; the uppermost of these are broad, drooping, and pointed at the extremities; some of them are also loosely webbed, their silky fibres curling inwards, like those of the ostrich. They seem to occupy the place of the tertials. The legs and naked part of the thighs are black, very thick and

strong; the hind toe seems rarely or never to reach the hard ground, though it may probably assist in preventing the bird from sinking too deep in the mire.

LONG-BILLED CURLEW.—NUMENIUS LONGIROSTRIS.

PLATE LXIV. FIG. 4.

Peale's Museum, No. 3910.

NUMENIUS LONGIROSTRIS.—WILSON.*

Numenius longirostris, Bonap. *Synop.* p. 314.—*North. Zool.* ii. p. 376.

THIS American species has been considered by the naturalists of Europe to be a mere variety of their own, notwithstanding

* Wilson had the merit of distinguishing and separating this species from the common curlew of Europe, and giving it the appropriate name of *longirostris*, from the extraordinary length of the bill. It will fill in America the place of the common curlew in this country, and appears to have the same manners, frequenting the sea-shores in winter, and the rich dry prairies during the breeding season. *Numenius arquata*, the British prototype of *N. longirostris*, during the breeding season, is entirely an inhabitant of the upland moors and sheep pastures, and in the soft and dewy mornings of May and June forms an object in their early solitude, which adds to their wildness. At first dawn, when nothing can be seen but rounded hills of rich and green pasture, rising one beyond another, with perhaps an extensive meadow between, looking more boundless by the mists and shadows of morn, a long string of sheep marching off at a sleepy pace on their well-beaten track to some more favourite feeding ground, the shrill tremulous call of the curlew to his mate has something in it wild and melancholy, yet always pleasing to the associations. In such situations do they build, making almost no nest, and, during the commencement of their amours, run skulkingly among the long grass and rushes, the male rising and sailing round, or descending with the wings closed above his back, and uttering his peculiar quavering whistle. The approach of an intruder requires more demonstration of his powers, and he approaches near, buffeting and *whauping* with all his might. When the young are hatched, they remain near the spot, and are for a long time difficult to raise; a pointer will stand and road them, and at this time they are tender and well-flavoured. By autumn, they are nearly all dispersed to the sea-coasts, and have now lost their clear whistle. They remain here until next spring, feeding at low tide on the shore, and retiring for a few miles to inland fields at high water; on their return again at the ebb, they show a remarkable instance of the instinctive knowledge implanted in, and most conspicuous in the

its difference of colour, and superior length of bill. These differences not being accidental, or found in a few individuals, but common to all, and none being found in America corresponding with that of Europe, we do not hesitate to consider the present as a distinct species peculiar to this country.

Like the preceding, this bird is an inhabitant of marshes in the vicinity of the sea. It is also found in the interior, where, from its long bill and loud whistling note, it is generally known.

The curlews appear in the salt marshes of New Jersey about the middle of May, on their way to the north, and in September, on their return from their breeding places. Their food consists chiefly of small crabs, which they are very dexterous at probing for, and pulling out of the holes with their long bills; they also feed on those small sea snails so abundant in the marshes, and on various worms and insects. They are likewise fond of bramble-berries, frequenting the fields and uplands in search of this fruit, on which they get very fat, and are then tender and good eating, altogether free from the sedgy taste with which their flesh is usually tainted while they feed in the salt marshes.

The curlews fly high, generally in a wedge-like form, some-migratory sea and water-fowl. During my occasional residence on the Solway, for some years past, in the month of August, these birds, with many others, were the objects of observation. They retired regularly inland after their favourite feeding places were covered. A long and narrow ledge of rocks runs into the Frith, behind which we used to lie concealed, for the purpose of getting shots at various sea-fowl returning at ebb. None were so regular as the curlew. The more aquatic were near the sea, and could perceive the gradual reflux; the curlews were far inland, but as soon as we could perceive the top of a sharp rock standing above water, we were sure to perceive the first flocks leave the land, thus keeping pace regularly with the change of the tides. They fly in a direct line to their feeding grounds, and often in a wedge shape; on alarm, a simultaneous cry is uttered, and the next coming flock turns from its course, uttering in repetition the same alarm note. In a few days they become so wary, as not to fly over the concealed station. They are one of the most difficult birds to approach, except during spring, but may be enticed by imitating their whistle.

—ED.

what resembling certain ducks, occasionally uttering their loud whistling note, by a dexterous imitation of which a whole flock may sometimes be enticed within gunshot, while the cries of the wounded are sure to detain them until the gunner has made repeated shots and great havoc among them.

This species is said to breed in Labrador, and in the neighbourhood of Hudson's Bay. A few instances have been known of one or two pairs remaining in the salt marshes of Cape May all summer. A person of respectability informed me, that he once started a curlew from her nest, which was composed of a little dry grass, and contained four eggs, very much resembling in size and colour those of the mud hen, or clapper rail. This was in the month of July. Cases of this kind are so rare, that the northern regions must be considered as the general breeding place of this species.

The long-billed curlew is twenty-five inches in length, and three feet three inches in extent, and, when in good order, weighs about thirty ounces; but individuals differ greatly in this respect: the bill is eight inches long, nearly straight for half its length, thence curving considerably downwards to its extremity, where it ends in an obtuse knob that overhangs the lower mandible; the colour black, except towards the base of the lower, where it is of a pale flesh-colour; tongue, extremely short, differing in this from the snipe; eye, dark; the general colour of the plumage above is black, spotted and barred along the edge of each feather with pale brown; chin, line over the eye and round the same, pale brownish white; neck, reddish brown, streaked with black; spots on the breast more sparingly dispersed; belly, thighs, and vent, pale plain rufous, without any spots; primaries, black on the outer edges, pale brown on the inner, and barred with black; shaft of the outer one, snowy; rest of the wing, pale reddish brown, elegantly barred with undulating lines of black; tail, slightly rounded, of an ashy brown, beautifully marked with herring bones of black; legs and naked thighs, very pale light blue, or lead colour, the middle toe connected with the two outer ones as far as the first

joint by a membrane, and bordered along the sides with a thick warty edge; lining of the wing, dark rufous, approaching a chestnut, and thinly spotted with black. Male and female alike in plumage. The bill continues to grow in length until the second season, when the bird receives its perfect plumage. The stomach of this species is lined with an extremely thick skin, feeling to the touch like the rough hardened palm of a sailor or blacksmith. The intestines are very tender, measuring usually about three feet in length, and as thick as a swan's quill. On the front, under the skin, there are two thick callosities, which border the upper side of the eye, lying close to the skull. These are common, I believe, to most of the tringa and scolopax tribes, and are probably designed to protect the skull from injury while the bird is probing and searching in the sand and mud.

YELLOW-CROWNED HERON.—ARDEA VIOLACEA.

PLATE LXV. FIG. 1.

Le Crabier de Bahama, *Briss.* v. pp. 481, 41.—Crested Bittern, *Catesby*, i. p. 79.—Le Crabier Gris de fer, *Buff.* vii. p. 399.—*Arct. Zool.* No. 352.—*Peale's Museum*, No. 3738.

NYCTICORAX VIOLACEA.—BONAPARTE.*

Ardea violacea, *Bonap. Synop.* p. 306.

THIS is one of the nocturnal species of the heron tribe, whose manners, place, and mode of building its nest, resemble greatly those of the common night heron (*Ardea nycticorax*); the form of its bill is also similar. The very imperfect figure

* This curious species is an instance of one of those connecting links, which intervene constantly among what have been defined *fixed groups*. The general form and appearance is decidedly a *Nycticorax*, and at the extremity of that form we should place it. Its manners and social manner of breeding are exactly those of the qua-bird, but it possesses the crest and long dorsal plumes of the egrets. As far as we at present see, it will form the passage from the last-mentioned form to the night herons, which will again reach the bitterns by those confused under the name of *tiger bitterns*.—ED.

and description of this species by Catesby seem to have led the greater part of European ornithologists astray, who appear to have copied their accounts from that erroneous source, otherwise it is difficult to conceive why they should either have given it the name of yellow-crowned, or have described it as being only fifteen inches in length ; since the crown of the perfect bird is pure white, and the whole length very near two feet. The name, however, erroneous as it is, has been retained in the present account, for the purpose of more particularly pointing out its absurdity, and designating the species.

This bird inhabits the lower parts of South Carolina, Georgia, and Louisiana, in the summer season ; reposing during the day among low, swampy woods, and feeding only in the night. It builds in societies, making its nest with sticks, among the branches of low trees, and lays four pale blue eggs. This species is not numerous in Carolina, which, with its solitary mode of life, makes this bird but little known there. It abounds on the Bahama Islands, where it also breeds ; and great numbers of the young, as we are told, are yearly taken for the table, being accounted in that quarter excellent eating. This bird also extends its migrations into Virginia, and even farther north ; one of them having been shot a few years ago on the borders of Schuylkill, below Philadelphia.

The food of this species consists of small fish, crabs, and lizards, particularly the former ; it also appears to have a strong attachment to the neighbourhood of the ocean.

The yellow-crowned heron is twenty-two inches in length, from the point of the bill to the end of the tail ; the long flowing plumes of the back extend four inches farther ; breadth, from tip to tip of the expanded wings, thirty-four inches ; bill, black, stout, and about four inches in length, the upper mandible grooved exactly like that of the common night heron ; lores, pale green ; irides, fiery red ; head and part of the neck, black, marked on each cheek with an oblong spot of white ; crested crown and upper part of the head, white, ending in two long narrow tapering plumes of pure white, more than

seven inches long ; under these are a few others of a blackish colour ; rest of the neck and whole lower parts, fine ash, somewhat whitish on that part of the neck where it joins the black ; upper parts, a dark ash, each feather streaked broadly down the centre with black, and bordered with white ; wing-quills, deep slate, edged finely with white ; tail, even at the end, and of the same ash colour ; wing-coverts, deep slate, broadly edged with pale cream ; from each shoulder proceed a number of long loosely-webbed tapering feathers, of an ash colour, streaked broadly down the middle with black, and extending four inches or more beyond the tips of the wings ; legs and feet, yellow ; middle claw, pectinated. Male and female, as in the common night heron, alike in plumage.

I strongly suspect that the species called by naturalists the Cayenne night heron (*Ardea Cayanensis*), is nothing more than the present, with which, according to their descriptions, it seems to agree almost exactly.

GREAT HERON.—ARDEA HERODIAS.—PLATE LXV. FIG. 2.

Le Heron hupé de Virginie, *Briss.* v. p. 416, 10 ; Grand Heron, *Buff.* vii. p. 355 ; *Id.* p. 386.—Largest Crested Heron, *Catesby, App.* pl. 10, fig. 1.—*Lath. Syn.* iii. p. 85, No. 51.—*Arct. Zool.* No. 341, 342.—*Peale's Museum*, No. 3629 ; *Young*, 3631.

ARDEA HERODIAS.—LINNEUS.*

Ardea herodias, *Bonap. Synop.* p. 304.—*North. Zool.* ii. p. 373.

THE history of this large and elegant bird having been long

* This may be called the representative of the European heron ; it is considerably larger, but in the general colours bears a strong resemblance, and is, moreover, the only North American bird that can rank with the genus *Ardea* in its restricted sense. In manners they are similar, feed in the evening, or early in the morning when their prey is most active in search of its own victims ; but roost at night except during very clear moonlight. They are extremely shy and watchful, and the height they are able to overlook with the

involved in error and obscurity,* I have taken more than common pains to present a faithful portrait of it in this place ; and to add to that every fact and authentic particular relative to its manners, which may be necessary to the elucidation of the subject.

The great heron is a constant inhabitant of the Atlantic coast, from New York to Florida ; in deep snows and severe weather seeking the open springs of the cedar and cypress swamps, and the muddy inlets occasionally covered by the tides. On the higher inland parts of the country, beyond the mountains, they are less numerous ; and one which was shot in the upper parts of New Hampshire, was described to me as a great curiosity. Many of their breeding places occur in both Carolinas, chiefly in the vicinity of the sea. In the lower

advantage of their long legs and neck, renders them difficult of approach, unless under extensive cover. When watching their prey they may be said to resemble a cat, prying anxiously about the sides of the ditches, lake, or stream, but as soon as the least motion or indication of a living creature is seen, they are fixed and ready to make a dart almost always unerring. Mouse, frog, or fish, even rails, and the young of the larger water fowl, are transfixed, and being carried to the nearest bank or dry ground, are immediately swallowed, always with the head downwards. Their prey appears to be often, if not always, transfixed,—a mode of capture not generally known, but admirably fitted to secure one as vigilant as the aggressor. One or two of the wild and beautiful islets on Loch Awe are occupied as breeding places by the herons, where I have climbed to many of their nests, all well supplied with trout and eels invariably pierced or stuck through. None of the species breed on the ground, and it is a curious and rather anomalous circumstance, that the ardeæ, the ibis, and some allied birds, which are decidedly waders, and formed for walking, should build and roost on trees, where their motions are all awkward, and where they seem as if constantly placed in a situation contrary to their habits or abilities. A heronry, during the breeding season, is a curious and interesting, as well as picturesque object.—Ed.

* Latham says of this species, that “all the upper parts of the body, the belly, tail, and legs, are brown ;” and this description has been repeated by every subsequent compiler. Buffon, with his usual eloquent absurdity, describes the heron as “exhibiting the picture of wretchedness, anxiety, and indigence ; condemned to struggle perpetually with misery and want ; sickened with the restless cravings of a famished appetite ;” a description so ridiculously untrue, that, were it possible for these birds to comprehend it, it would excite the risibility of the whole tribe.

parts of New Jersey, they have also their favourite places for building, and rearing their young. These are generally in the gloomy solitudes of the tallest cedar swamps, where, if unmolested, they continue annually to breed for many years. These swamps are from half a mile to a mile in breadth, and sometimes five or six in length, and appear as if they occupied the former channel of some choked up river, stream, lake, or arm of the sea. The appearance they present to a stranger is singular. A front of tall and perfectly straight trunks, rising to the height of fifty or sixty feet without a limb, and crowded in every direction, their tops so closely woven together as to shut out the day, spreading the gloom of a perpetual twilight below. On a nearer approach, they are found to rise out of the water, which, from the impregnation of the fallen leaves and roots of the cedars, is of the colour of brandy. Amidst this bottom of congregated springs, the ruins of the former forest lie piled in every state of confusion. The roots, prostrate logs, and, in many places, the water, are covered with green mantling moss, while an undergrowth of laurel, fifteen or twenty feet high, intersects every opening so completely, as to render a passage through laborious and harassing beyond description; at every step, you either sink to the knees, clamber over fallen timber, squeeze yourself through between the stubborn laurels, or plunge to the middle in ponds made by the uprooting of large trees, which the green moss concealed from observation. In calm weather, the silence of death reigns in these dreary regions; a few interrupted rays of light shoot across the gloom; and unless for the occasional hollow screams of the herons, and the melancholy chirping of one or two species of small birds, all is silence, solitude, and desolation. When a breeze rises, at first it sighs mournfully through the tops; but as the gale increases, the tall mast-like cedars wave like fishing poles, and rubbing against each other, produce a variety of singular noises, that, with the help of a little imagination, resemble shrieks, groans, growling of bears, wolves, and such like comfortable music.

On the tops of the tallest of these cedars the herons construct their nests, ten or fifteen pair sometimes occupying a particular part of the swamp. The nests are large, formed of sticks, and lined with smaller twigs; each occupies the top of a single tree. The eggs are generally four, of an oblong pointed form, larger than those of a hen, and of a light greenish blue, without any spots. The young are produced about the middle of May, and remain on the trees until they are full as heavy as the old ones, being extremely fat, before they are able to fly. They breed but once in the season. If disturbed in their breeding place, the old birds fly occasionally over the spot, sometimes honking like a goose, sometimes uttering a coarse hollow grunting noise like that of a hog, but much louder.

The great heron is said to be fat at the full moon, and lean at its decrease; this might be accounted for by the fact of their fishing regularly by moonlight through the greater part of the night, as well as during the day; but the observation is not universal, for at such times I have found some lean, as well as others fat. The young are said to be excellent for the table, and even the old birds, when in good order, and properly cooked, are esteemed by many.

The principal food of the great heron is fish, for which he watches with the most unwearied patience, and seizes them with surprising dexterity. At the edge of the river, pond, or sea-shore, he stands fixed and motionless, sometimes for hours together. But his stroke is quick as thought, and sure as fate, to the first luckless fish that approaches within his reach; these he sometimes beats to death, and always swallows head foremost, such being their uniform position in the stomach. He is also an excellent mouser, and of great service to our meadows, in destroying the short-tailed or meadow mouse, so injurious to the banks. He also feeds eagerly on grasshoppers, various winged insects, particularly dragon flies, which he is very expert at striking, and also eats the seeds of that species

of nymphæ usually called splatterdocks, so abundant along our fresh water ponds and rivers.

The heron has great powers of wing, flying sometimes very high, and to a great distance ; his neck doubled, his head drawn in, and his long legs stretched out in a right line behind him, appearing like a tail, and, probably, serving the same rudder-like office. When he leaves the sea-coast, and traces, on wing, the courses of the creeks or rivers upwards, he is said to prognosticate rain ; when downwards, dry weather. He is most jealously vigilant and watchful of man, so that those who wish to succeed in shooting the heron, must approach him entirely unseen, and by stratagem. The same inducements, however, for his destruction, do not prevail here as in Europe. Our sea-shores and rivers are free to all for the amusement of fishing. Luxury has not yet constructed her thousands of fish ponds, and surrounded them with steel traps, spring guns, and heron snares.* In our vast fens, meadows, and sea marshes, this stately bird roams at pleasure, feasting on the never-failing magazines of frogs, fish, seeds, and insects, with which they abound, and of which he, probably, considers himself the sole

* "The heron," says an English writer, "is a very great devourer of fish, and does more mischief in a pond than an otter. People who have kept herons, have had the curiosity to number the fish they feed them with into a tub of water, and counting them again afterwards, it has been found that they will eat up fifty moderate dace and roaches in a day. It has been found, that in carp ponds visited by this bird, one heron will eat up a thousand store carp in a year ; and will hunt them so close, as to let very few escape. The readiest method of destroying this mischievous bird, is by fishing for him in the manner of pike, with a baited hook. When the haunt of the heron is found out, three or four small roach, or dace, are to be procured, and each of them is to be baited on a wire, with a strong hook at the end, entering the wire just at the gills, and letting it run just under the skin to the tail ; the fish will live in this manner for five or six days, which is a very essential thing ; for if it be dead, the heron will not touch it. A strong line is then to be prepared of silk and wire twisted together, and is to be about two yards long ; tie this to the wire that holds the hook, and to the other end of it there is to be tied a stone of about a pound weight ; let three or four of these baits be sunk in different shallow parts of the pond, and, in a night or two's time, the heron will not fail to be taken with one or other of them."

lord and proprietor. I have several times seen the bald eagle attack and tease the great heron; but whether for sport, or to make him disgorge his fish, I am uncertain.

The common heron of Europe (*Ardea major*) very much resembles the present, which might, as usual, have probably been ranked as the original stock, of which the present was a mere degenerated species, were it not that the American is greatly superior, in size and weight, to the European species; the former measuring four feet four inches, and weighing upwards of seven pounds; the latter, three feet three inches, and rarely weighing more than four pounds. Yet, with the exception of size, and the rust-coloured thighs of the present, they are extremely alike. The common heron of Europe, however, is not an inhabitant of the United States.

The great heron does not receive his full plumage during the first season, nor until the summer of the second. In the first season, the young birds are entirely destitute of the white plumage of the crown, and the long pointed feathers of the back, shoulders, and breast. In this dress I have frequently shot them in autumn; but in the third year, both males and females have assumed their complete dress, and, contrary to all the European accounts which I have met with, both are then so nearly alike in colour and markings, as scarcely to be distinguished from each other, both having the long flowing crest, and all the ornamental white pointed plumage of the back and breast. Indeed, this sameness in the plumage of the males and females, when arrived at their perfect state, is a characteristic of the whole of the genus with which I am acquainted. Whether it be different with those of Europe, or that the young and imperfect birds have been hitherto mistaken for females, I will not pretend to say, though I think the latter conjecture highly probable, as the night raven (*Ardea nycticorax*) has been known in Europe for several centuries, and yet, in all their accounts, the sameness of the colours and plumage of the male and female of that bird is nowhere men-

tioned ; on the contrary, the young or yearling bird has been universally described as the female.

On the 18th of May, I examined, both externally and by dissection, five specimens of the great heron, all in complete plumage, killed in a cedar swamp near the head of Tuckahoe river, in Cape May county, New Jersey. In this case, the females could not be mistaken, as some of the eggs were nearly ready for exclusion.

Length of the great heron, four feet four inches from the point of the bill to the end of the tail ; and to the bottom of the feet, five feet four inches ; extent, six feet ; bill eight inches long, and one inch and a quarter in width, of a yellow colour, in some, blackish on the ridge, extremely sharp at the point, the edges also sharp, and slightly serrated near the extremity ; space round the eye, from the nostril, a light purplish blue ; irides, orange, brightening into yellow where they join the pupil ; forehead and middle of the crown, white, passing over the eye ; sides of the crown and hind head, deep slate, or bluish black, and elegantly crested, the two long, tapering black feathers, being full eight inches in length ; chin, cheeks, and sides of the head, white for several inches ; throat, white, thickly streaked with double rows of black ; rest of the neck, brownish ash, from the lower part of which shoot a great number of long, narrow-pointed, white feathers, that spread over the breast, and reach nearly to the thighs ; under these long plumes, the breast itself, and middle of the belly, are of a deep blackish slate, the latter streaked with white ; sides, blue ash ; vent, white ; thighs, and ridges of the wings, a dark purplish rust colour ; whole upper parts of the wings, tail, and body, a fine light ash, the latter ornamented with a profusion of long, narrow, white, tapering feathers, originating on the shoulders, or upper part of the back, and falling gracefully over the wings ; primaries, very dark slate, nearly black ; naked thighs, brownish yellow ; legs, brownish black, tintured with yellow, and netted with seams of whitish ; in some, the legs are nearly black. Little difference could be perceived between the plu-

mage of the males and females ; the latter were rather less, and the long pointed plumes of the back were not quite so abundant.

The young birds of the first year have the whole upper part of the head of a dark slate ; want the long plumes of the breast and back ; and have the body, neck, and lesser coverts of the wings, considerably tinged with ferruginous.

On dissection, the gullet was found of great width, from the mouth to the stomach, which has not the two strong muscular coats that form the gizzard of some birds ; it was more loose, of considerable and uniform thickness throughout, and capable of containing nearly a pint. It was entirely filled with fish, among which were some small eels, all placed head downwards ; the intestines measured nine feet in length, were scarcely as thick as a goose-quill, and incapable of being distended ; so that the vulgar story of the heron swallowing eels, which, passing suddenly through him, are repeatedly swallowed, is absurd and impossible. On the external coat of the stomach of one of these birds, opened soon after being shot, something like a blood-vessel lay in several meandering folds, enveloped in a membrane, and closely adhering to the surface. On carefully opening this membrane, it was found to contain a large, round, living worm, eight inches in length ; another, of like length, was found coiled, in the same manner, on another part of the external coat. It may also be worthy of notice, that the intestines of the young birds of the first season, killed in the month of October, when they were nearly as large as the others, measured only six feet four or five inches ; those of the full-grown ones, from eight to nine feet in length.

AMERICAN BITTERN.—ARDEA MINOR.—PLATE LXV. FIG. 3.

Le Butor de la Baye de Hudson, *Briss.* v. p. 449, 25.—*Buff.* vii. p. 430.—*Edw.* 136.—*Lath. Syn.* iii. p. 58.—*Peale's Museum*, No. 3727.

BOTAURUS MINOR.—BONAPARTE.

Ardea minor, *Bonap. Synop.* p. 307.—*Ardea Mokoho*.—*Wagl. Syst. Av.* No. 29.

THIS is another nocturnal species, common to all our sea and river marshes, though nowhere numerous. It rests all day among the reeds and rushes, and, unless disturbed, flies and feeds only during the night. In some places, it is called the Indian hen; on the sea-coast of New Jersey, it is known by the name of *dunkadoo*, a word probably imitative of its common note. They are also found in the interior, having myself killed one at the inlet of the Seneca lake, in October. It utters, at times, a hollow guttural note among the reeds, but has nothing of that loud booming sound for which the European bittern is so remarkable. This circumstance, with its great inferiority of size, and difference of marking, sufficiently prove them to be two distinct species, although, hitherto, the present has been classed as a mere variety of the European bittern. These birds, we are informed, visit Severn River, at Hudson's Bay, about the beginning of June; make their nests in swamps, laying four cinereous green eggs among the long grass. The young are said to be at first black.

These birds, when disturbed, rise with a hollow *kwa*, and are then easily shot down, as they fly heavily. Like other night birds, their sight is most acute during the evening twilight; but their hearing is, at all times, exquisite.

The American bittern is twenty-seven inches long, and three feet four inches in extent; from the point of the bill to the extremity of the toes, it measures three feet; the bill is

four inches long ; the upper mandible, black ; the lower, greenish yellow ; lores and eyelids, yellow ; irides, bright yellow ; upper part of the head, flat, and remarkably depressed ; the plumage there is of a deep blackish brown, long behind and on the neck, the general colour of which is a yellowish brown shaded with darker ; this long plumage of the neck the bird can throw forward at will, when irritated, so as to give him a more formidable appearance ; throat, whitish, streaked with deep brown ; from the posterior and lower part of the auriculars, a broad patch of deep black passes diagonally across the neck, a distinguished characteristic of this species ; the back is deep brown, barred, and mottled with innumerable specks and streaks of brownish yellow ; quills, black, with a leaden gloss, and tipped with yellowish brown ; legs and feet, yellow, tinged with pale green ; middle claw, pectinated ; belly, light yellowish brown, streaked with darker ; vent, plain ; thighs, sprinkled on the outside with grains of dark brown ; male and female, nearly alike, the latter somewhat less. According to Bewick, the tail of the European bittern contains only ten feathers ; the American species has, invariably, twelve. The intestines measured five feet six inches in length, and were very little thicker than a common knitting needle ; the stomach is usually filled with fish or frogs.*

This bird, when fat, is considered by many to be excellent eating.

* I have taken an entire water-rail from the stomach of the European bittern.
—Ed.

LEAST BITTERN.—ARDEA EXILIS.—PLATE LXV.

FIG. 4. MALE.

Luth. Syn. iii. p. 26, No. 28.—*Peale's Museum*, No. 3814 ; female, 3815.

ARDEOLA EXILIS.—BONAPARTE.*

Ardeola exilis, *Bonap. Synop.* p. 309.—*Ardea exilis*, *Wagl. Syst. Av.* No. 43.—*Le Heron rouge et noir*, *Azar. Voy.* 360.—*Descript. opt. auct. Wagl.*

THIS is the smallest known species of the whole tribe. It is commonly found in fresh water meadows, and rarely visits the salt marshes. One shot near Great Egg Harbour was presented to me as a very uncommon bird. In the meadows of Schuylkill and Delaware, below Philadelphia, a few of these birds breed every year ; making their nests in the thick tussocks of grass, in swampy places. When alarmed, they seldom fly far, but take shelter among the reeds or long grass. They are scarcely ever seen exposed, but skulk during the day ; and, like the preceding species, feed chiefly in the night.

This little creature measures twelve inches in length, and sixteen in extent ; the bill is more than two inches and a quarter long, yellow, ridged with black, and very sharp pointed ; space round the eye, pale yellow ; irides, bright yellow ; whole upper part of the crested head, the back, scapulars, and tail, very deep slate, reflecting slight tints of green ; throat, white, here and there tinged with buff ; hind part of the neck, dark chestnut bay ; sides of the neck, cheeks, and line over the eye, brown buff ; lesser wing-coverts, the same ; greater wing-coverts, chestnut, with a spot of the same at the bend of the

* Bonaparte proposes the title of *Ardeola*, as a subgenus for this species and the *A. minuta* of Britain. They differ from the other (*A. virescens*, &c.) small herons, in having the space above the knees plumed, and in the scapularies taking the broad form of those of the bitterns and night herons, instead of beautifully lengthened plumes.

Three species will constitute this group, that of America, *A. exilis* ; *A. minuta*, of Europe ; and *A. pusilla*, Wagl. of New Holland. They are all very similar ; the latter has been confounded hitherto with the others.—ED.

wing; the primary coverts are also tipped with the same; wing-quills, dark slate; breast, white, tinged with ochre, under which lie a number of blackish feathers; belly and vent, white; sides, pale ochre; legs, greenish on the shins, hind part and feet, yellow; thighs, feathered to within a quarter of an inch of the knees; middle claw, pectinated; toes, tinged with pale green; feet, large, the span of the foot measuring two inches and three quarters. Male and female, nearly alike in colour. The young birds are brown on the crown and back. The stomach was filled with small fish; and the intestines, which were extremely slender, measured, in length, about four feet.

The least bittern is also found in Jamaica, and several of the West India islands.

WOOD IBIS.—TANTALUS LOCULATOR.—PLATE LXVI. FIG. 1.

Gmel. Syst. p. 647.—*Le Grand Courly d'Amérique, Briss.* v. p. 335, 8. — *Couricaca, Buff.* vii. p. 276. *Pl. Enl.* 868.—*Catesby*, i. 81.—*Arct. Zool.* No. 360. — *Lath. Syn.* iii. p. 104.—*Peale's Museum*, No. 3832.

TANTALUS LOCULATOR.—LINNÆUS.*

Tantalus loculator, Bonap. Synop. p. 310.—*Wagl. Syst. Av.* No. 1.

THE wood ibis inhabits the lower parts of Louisiana, Carolina, and Georgia; is very common in Florida, and extends as

* This species, I believe peculiar to the New World, is extensively dispersed over it, but migratory towards the north. The bird stated by Latham, as identical with this, from New Holland, will most probably turn out the *T. lacteus*, or *leucocephalus*; at all events, distinct. The genera *Tantalus* and *Ibis* run into each other in one of those gradual marches where it is nearly impossible to mark the distinction, yet, taking the extremes, the difference is very great. *Tantalus loculator* is the only American species of the former group, principally distinguished by the base of the bill being equal in breadth with the forehead, which, with the face, cheeks and throat, are bare. In their general manner, they are more sluggish than the ibis, and possess more of the inactivity of the heron when gorged, or the sedate gait of the stork and adjutants. The known species have been limited to about five in number, natives of America, Africa, and India.

far south as Cayenne, Brazil, and various parts of South America. In the United States it is migratory; but has never, to my knowledge, been found to the north of Virginia. Its favourite haunts are watery savannas and inland swamps, where it feeds on fish and reptiles. The French inhabitants of Louisiana esteem it good eating.

With the particular manners of this species I am not personally acquainted; but the following characteristic traits are

The genus *Ibis* is more extensive; they are spread over all the world, and among themselves present very considerable modifications of form. Those of Northern America are three. The two now figured, and the *I. Falcinellus* of Europe, first noticed by Mr Ord as a native of that country, in the Journal of the Academy, under the name of *Tantalus Mexicanus*, and afterwards recognised by the Prince of Musignano as the bird of Europe. By Wagler, in his *Systema Avium*, they are put into three divisions, distinguished by the scutellation of the tarsi, and the proportion of the toes. The face is often bare; in one or two the crown is developed into a shield, as in *I. calva*; in a few the head and neck are unplumed, *I. sacra* and *melanocephalus*; and in some, as that of Europe, the face and head are nearly wholly clothed, and bear close resemblance to the curlews. They are all partly gregarious, feed in small groups, and breed on trees in most extensive communities. They include birds well known for many curious particulars connected with the history and superstitions of nations, and gorgeous from the pureness and decided contrast or dazzling richness of their plumage. To the former will belong the sacred ibis of antiquity, whose bodies, *in the words of a versatile and pleasing writer*,—"from the perfection of an unknown process, have almost defied the ravages of time; and, through its interventions, the self-same individuals exist in a tangible form, which wandered along the banks of the mysterious Nile in the earliest ages of the world, or, 'in dim seclusion veiled,' inhabited the sanctuary of temples, which, though themselves of most magnificent proportions, are now scarcely discernible amid the desert dust of an unpeopled wilderness." To the others will belong the brilliant species next described, no less remarkable for its unassuming garb in the dress of the first year, and the richly plumaged glossy ibis. The last-mentioned bird is more worthy of notice, holding a prominent part in the mythology of the Egyptians, and occasionally honoured by embalment; it is also of extensive geographical distribution, being found in India, Africa, America, Europe, and an occasional stray individual finding a devious course to the shores of Great Britain. A specimen has occurred on the Northumbrian coast within this month.—Ed.

given of it by Mr William Bartram, who had the best opportunities of noting them.

“ This solitary bird,” he observes, “ does not associate in flocks, but is generally seen alone, commonly near the banks of great rivers, in vast marshes or meadows, especially such as are covered by inundations, and also in the vast deserted rice plantations ; he stands alone, on the topmost limb of tall dead cypress trees, his neck contracted or drawn in upon his shoulders, and his beak resting like a long scythe upon his breast ; in this pensive posture, and solitary situation, they look extremely grave, sorrowful, and melancholy, as if in the deepest thought. They are never seen on the sea-coast, and yet are never found at a great distance from it. They feed on serpents, young alligators, frogs, and other reptiles.”*

The figure of this bird, given in the plate, was drawn from a very fine specimen, sent to me from Georgia by Stephen Elliot, Esq. of Beaufort, South Carolina ; its size and markings were as follow :—

Length, three feet two inches ; bill, nearly nine inches long, straight for half its length, thence curving downwards to the extremity, and full two inches thick at the base, where it rises high in the head, the whole of a brownish horn colour ; the under mandible fits into the upper in its whole length, and both are very sharp edged ; face, and naked head, and part of the neck, dull greenish blue, wrinkled ; eye, large, seated high in the head ; irides, dark red ; under the lower jaw is a loose corrugated skin, or pouch, capable of containing about half a pint ; whole body, neck, and lower parts, white ; quills, dark glossy green and purple ; tail, about two inches shorter than the wings, even at the end, and of a deep and rich violet ; legs and naked thighs, dusky green ; feet and toes, yellowish, sprinkled with black ; feet, almost semipalmated, and bordered to the claws with a narrow membrane ; some of the greater wing-coverts are black at the root, and shafted with black ;

* *Travels, &c.* p. 150.

plumage on the upper ridge of the neck, generally worn, as in the presented specimen, with rubbing on the back, while in its common position, of resting its bill on its breast, in the manner of the white ibis. (See fig. 3.)

The female has only the head and chin naked; both are subject to considerable changes of colour when young, the body being found sometimes blackish above, the belly cinereous, and spots of black on the wing-coverts; all of which, as the birds advance in age, gradually disappear, and leave the plumage of the body, &c. as has been described.

SCARLET IBIS.—TANTALUS RUBER.—PLATE LXVI. FIG. 2.

Le Courly rouge du Bresil, *Briss.* v. p. 344. Pl. 29. fig. 2—Red Gurlaw, *Catesby*, i. 84.—*Arct. Zool.* No. 366, 382.—*Peale's Museum*, No. 3864; female, 3868.

IBIS RUBRA.—VIEILLOT.

Ibis rubra, *Vieill.*—*Bonap. Synop.* p. 311.—*Wagl. Syst. Av.* No. 4.—Ibis ruber, *Wils. Ill. of Zool.* i. Pl. 7. and 36. in the plum. of second and first years.—Ibis rouge, *Less. Man. d'Ornith.* ii. p. 254.

THIS beautiful bird is found in the most southern parts of Carolina, also in Georgia and Florida, chiefly about the sea-shore and its vicinity. In most parts of America, within the tropics, and in almost all the West India islands, it is said to be common; also in the Bahamas. Of its manners, little more has been collected, than that it frequents the borders of the sea, and shores of the neighbouring rivers, feeding on small fry, shell-fish, sea worms, and small crabs. It is said frequently to perch on trees, sometimes in large flocks; but to lay its eggs on the ground, on a bed of leaves. The eggs are described as being of a greenish colour; the young, when hatched, black; soon after, grey; and before they are able to fly, white; continuing gradually to assume their red colour until the third year, when the scarlet plumage is complete. It is also said that they usually keep in flocks, the young and old birds separately. They have frequently been domesticated.

One of them, which lived for some time in the Museum of this city, was dexterous at catching flies, and most usually walked about, on that pursuit, in the position in which it is represented in the plate.

The scarlet ibis measures twenty-three inches in length, and thirty-seven in extent; the bill is five inches long, thick, and somewhat of a square form at the base, gradually bent downwards, and sharply ridged, of a black colour, except near the base, where it inclines to red; irides, dark hazel; the naked face is finely wrinkled, and of a pale red; chin, also bare and wrinkled for about an inch; whole plumage, a rich glowing scarlet, except about three inches of the extremities of the four outer quill feathers, which are of a deep steel blue; legs and naked part of the thighs, pale red, the three anterior toes united by a membrane as far as the first joint.

Whether the female differs, in the colour of her plumage, from the male, or what changes both undergo during the first and second years, I am unable to say from personal observation. Being a scarce species with us, and only found on our most remote southern shores, a sufficient number of specimens have not been procured, to enable me to settle this matter with sufficient certainty.

WHITE IBIS.—TANTALUS ALBUS.—PLATE. LXVI. FIG. 3.

Le Courly blanc du Bresil, *Briss.* v. p. 339, 10.—*Buff.* viii. p. 41.—White Curlew, *Catesby*, i. pl. 82.—*Lath. Syn.* iii. p. 111, No. 9.—*Arct. Zool.* No. 363.

IBIS ALBA.—VIEILLOT.

Ibis alba, *Wagl. Syst. Av.* No. 5.—*Bonap. Synop.* p. 312.

THIS species bears in every respect, except that of colour, so strong a resemblance to the preceding, that I have been almost induced to believe it the same, in its white or imperfect stage of colour. The length and form of the bill, the size, conformation, as well as colour of the legs, the general length and breadth, and even the steel blue on the four outer quill feathers, are exactly alike in both. These suggestions, how-

ever, are not made with any certainty of its being the same, but as circumstances which may lead to a more precise examination of the subject hereafter.

I found this species pretty numerous on the borders of Lake Pontchartrain, near New Orleans, in the month of June, and also observed the Indians sitting in market with strings of them for sale. I met with them again on the low keys or islands off the Peninsula of Florida. Mr Bartram observes, that "they fly in large flocks or squadrons, evening and morning, to and from their feeding places or roosts, and are usually called Spanish curlews. They feed chiefly on cray fish, whose cells they probe, and, with their strong pinching bills, drag them out." The low islands above mentioned abound with these creatures and small crabs, the ground in some places seeming alive with them, so that the rattling of their shells against one another was incessant. My venerable friend, in his observations on these birds, adds, "It is a pleasing sight at times of high winds, and heavy thunder storms, to observe the numerous squadrons of these Spanish curlews, driving to and fro, turning and tacking about high up in the air, when, by their various evolutions in the different and opposite currents of the wind, high in the clouds, their silvery white plumage gleams and sparkles like the brightest crystal, reflecting the sunbeams that dart upon them between the dark clouds."

The white ibis is twenty-three inches long, and thirty-seven inches in extent; bill formed exactly like that of the scarlet species, of a pale red, blackish towards the point; face a reddish flesh colour, and finely wrinkled; irides, whitish; whole plumage pure white, except about four inches of the tips of the four outer quill-feathers, which are of a deep and glossy steel blue; legs and feet pale red, webbed to the first joint.

These birds I frequently observed standing on the dead limbs of trees, and on the shore, resting on one leg, their body in an almost perpendicular position, as represented in the figure, the head and bill resting on the breast. This appears to be its most common mode of resting, and perhaps sleeping,

as, in all those which I examined, the plumage on the upper ridge of the neck, and upper part of the back, was evidently worn by this habit. The same is equally observable on the neck and back of the wood ibis.

The present species rarely extends its visits north of Carolina, and even in that state is only seen for a few weeks towards the end of summer. In Florida they are common, but seldom remove to any great distance from the sea.

RED FLAMINGO.—PHŒNICOPTERUS RUBER.

PLATE LXVI. FIG. 4.

Le Flamant, *Briss.* vi. p. 532, pl. 47, fig. 1.—*Buff.* viii. p. 475, pl. 39. *Pl. Enl.* 63.—*Lath. Syn.* iii. p. 299. pl. 93.—*Arct. Zool.* No. 422.—*Catesby*, i. pl. 73, 74.—*Peale's Museum*, No. 3545, bird of the first year; No. 3546, bird of the second year.

PHŒNICOPTERUS RUBER.—LINNÆUS.

Phœnicopterus ruber, *Bonap. Synop.* p. 348.

THIS very singular species being occasionally seen on the southern frontiers of the United States, and on the peninsula of East Florida, where it is more common, has a claim to a niche in our Ornithological Museum, although the author regrets, that, from personal observation, he can add nothing to the particulars of its history, already fully detailed in various European works. From the most respectable of these, the *Synopsis* of Dr Latham, he has collected such particulars as appear authentic and interesting.

“ This remarkable bird has the neck and legs in a greater disproportion than any other bird; the length from the end of the bill to that of the tail, is four feet two or three inches; but to the end of the claws, measures sometimes more than six feet. The bill is four inches and a quarter long, and of a construction different from that of any other bird; the upper mandible very thin and flat, and somewhat movable; the under, thick; both of them bending downwards from the middle; the nostrils are linear, and placed in a blackish membrane; the

end of the bill, as far as the bend, is black; from thence to the base, reddish yellow; round the base, quite to the eye, covered with a flesh-coloured cere; the neck is slender, and of a great length; the tongue, large, fleshy, filling the cavity of the bill, furnished with twelve or more hooked papillæ on each side, turning backwards; the tip, a sharp cartilaginous substance. The bird, when in full plumage, is wholly of a most deep scarlet (those of Africa said to be the deepest), except the quills, which are black; from the base of the thigh to the claws, measures thirty-two inches, of which the feathered part takes up no more than three inches; the bare part above the knee, thirteen inches; and from thence to the claws, sixteen; the colour of the bare parts is red, and the toes are furnished with a web, as in the duck genus, but is deeply indented. The legs are not straight, but slightly bent, the shin rather projecting.

“ These birds do not gain their full plumage till the third year. In the first, they are of a greyish white for the most part; the second, of a clearer white, tinged with red, or rather rose colour; but the wings and scapulars are red; in the third year, a general glowing scarlet manifests itself throughout; the bill and legs also keep pace with the gradation of colour in the plumage, these parts changing to their colours by degrees, as the bird approaches to an adult state.

“ Flamingoes prefer a warm climate; in the old continent not often met with beyond forty degrees north or south; every where seen on the African coast, and adjacent isles, quite to the Cape of Good Hope; * and now and then on the coasts of Spain, † Italy, and those of France lying in the Mediterranean Sea; being, at times, met with at Marseilles, and for some way up the Rhone; in some seasons frequents Aleppo, ‡ and parts adjacent; seen also on the Persian side of the Cas-

* In Zee Coow river.—*Philosophical Transactions*. Once plenty in the Isle of France.—*Voyage to Mauritius*, p. 66.

† About Valencia, in the lake Albufere.—*DILLON'S Travels*, p. 374.

‡ *RUSSEL'S Aleppo*, p. 69.

pian Sea ; and from thence, along the western coast, as far as the Wolga ; though this at uncertain times, and chiefly in considerable flocks, coming from the north coast mostly in October and November ; but so soon as the wind changes, they totally disappear.* They breed in the Cape Verd Isles, particularly in that of Sal.† The nest is of a singular construction, made of mud, in shape of a hillock, with a cavity at top ; in this the female lays generally two white eggs, ‡ of the size of those of a goose, but more elongated. The hillock is of such a height as to admit of the bird's sitting on it conveniently, or rather standing, as the legs are placed one on each side at full length.§ The young cannot fly till full grown, but run very fast.

“ Flamingoes, for the most part, keep together in flocks, and now and then are seen in great numbers together, except in breeding time. Dampier mentions having, with two more in company, killed fourteen at once ; but this was effected by secreting themselves, for they are very shy birds, and will, by no means, suffer any one to approach, openly, near enough to shoot them.|| Kolben observes, that they are very numerous at the Cape, keeping in the day on the borders of the lakes and rivers, and lodging themselves of nights in the long grass on the hills. They are also common to various places in the warmer parts of America, frequenting the same latitudes as in any other quarters of the world ; being met with in Peru, Chili, Cayenne,¶ and the coast of Brazil, as well as the various islands of the West Indies. Sloane found them in Jamaica, but particularly at the Bahama Islands, and that of Cuba, where they

* *Decouv. Russ.* ii. p. 24.

† DAMPIER'S *Voy.* i. p. 70.

‡ They never lay more than three, and seldom fewer.—*Phil. Trans.*

§ Sometimes will lay the eggs on a projecting part of a low rock, if it be placed sufficiently convenient so as to admit of the legs being placed one on each side.—LINNÆUS.

|| Davies talks of the gunner disguising himself in an ox hide, and, by this means, getting within gunshot.—*Hist. of Barbadoes*, p. 88.

¶ Called there by the name of Tococo.

breed. When seen at a distance, they appear as a regiment of soldiers, being arranged alongside of one another, on the borders of the rivers, searching for food, which chiefly consists of small fish,* or the eggs of them, and of water insects, which they search after by plunging in the bill and part of the head; from time to time trampling with their feet to muddy the water, that their prey may be raised from the bottom. In feeding, are said to twist the neck in such a manner, that the upper part of the bill is applied to the ground;† during this, one of them is said to stand sentinel, and the moment he sounds the alarm, the whole flock take wing. This bird, when at rest, stands on one leg, the other being drawn up close to the body, with the head placed under the wing on that side of the body it stands on.

“The flesh of these birds is esteemed pretty good meat, and the young thought, by some, equal to that of a partridge;‡ but the greatest dainty is the tongue, which was esteemed by the ancients an exquisite morsel.§ Are sometimes caught young, and brought up tame; but are ever impatient of cold, and in this state will seldom live a great while, gradually losing their colour, flesh, and appetite; and dying for want of that food, which, in a state of nature at large, they were abundantly supplied with.”

* Small shell-fish.—GESNER.

† LINNÆUS, BRISSON.

‡ Commonly fat, and accounted delicate.—DAVIES'S *Hist. of Barbadoes*, p. 88. The inhabitants of Provence always throw away the flesh, as it tastes fishy, and only make use of the feathers as ornaments to other birds at particular entertainments.—DILLON'S *Travels*, p. 374.

§ See PLIN. ix. cap. 48.

BLACK, OR SURF DUCK, *ANAS PERSPICILLATA* —

PLATE LXVII. FIG. 2. Male.

La grande Macreuse de la Baye de Hudson, *Briss.* vi. 425, 30.—La Macreuse à large bec, *Buff.* ix. p. 244; *Pl. Enl.* 995.—*Edw.* pl. 155.—*Lath. Syn.* iii. p. 479.—*Phil. Trans.* lxii. p. 417.—*Peale's Museum*, No. 2788; female, 2789.

OIDEMIA PERSPICILLATA.—STEPHENS.

Oidemia perspicillata, *Steph. Cont. Sh. Gen. Zool.* xii. p. 219.—*Oidemia*, sub-gen.
Fuligula perspicillata, *Bonap. Synop.* p. 389.—*Oidemia perspicillata*, *North. Zool.* ii. p. 449.—*Jard. and Selby, Illust. of Ornith.* pl. 138.

THIS duck is peculiar to America,* and altogether confined to the shores and bays of the sea, particularly where the waves roll over the sandy beach. Their food consists principally of those small bivalve shell-fish already described, spout-fish, and others that lie in the sand near its surface. For these they dive almost constantly, both in the sandy bays and amidst the tumbling surf. They seldom or never visit the salt marshes. They continue on our shores during the winter, and leave us early in May, for their breeding places in the north. Their skins are remarkably strong, and their flesh coarse, tasting of fish. They are shy birds, not easily approached, and are common in winter along the whole coast, from the River St Lawrence to Florida.

The length of this species is twenty inches; extent, thirty-two inches; the bill is yellowish red, elevated at the base, and marked on the side of the upper mandible with a large square

* One or two instances of this bird being killed on the shores of Great Britain have occurred; and, as an occasional visitant, it will be figured in the concluding Number of Mr Selby's *Illustrations of British Ornithology*. It is also occasionally met with on the continent of Europe, but generally in high latitudes, and, though unfrequent elsewhere, it is not entirely confined to America.—ED.

patch of black, preceded by another space of a pearl colour; the part of the bill thus marked, swells, or projects, considerably from the common surface; the nostrils are large and pervious; the sides of the bill broadly serrated, -or toothed; both mandibles are furnished with a nail at the extremity; irides, white, or very pale cream; whole plumage, a shining black, marked on the crown and hind head with two triangular spaces of pure white; the plumage on both these spots is shorter and thinner than the rest; legs and feet, blood red; membrane of the webbed feet, black; the primary quills are of a deep dusky brown.

On dissection, the gullet was found to be gradually enlarged to the gizzard, which was altogether filled with broken shell-fish. There was a singular hard expansion at the commencement of the windpipe, and another much larger, about three-quarters of an inch above where it separates into the two lobes of the lungs; this last was larger than a Spanish hazel nut, flat on one side, and convex on the other. The protuberance on each side of the bill communicated with the nostril, and was hollow. All these were probably intended to contain supplies of air for the bird's support while under water; the last may also protect the head from the sharp edges of the shells.

The female is altogether of a sooty brown, lightest about the neck; the prominences on the bill are scarcely observable, and its colour dusky.

This species was also found by Captain Cook, at Nootka Sound, on the north-west coast of America.

BUFFEL-HEADED DUCK, ANAS ALBEOLA.—PLATE LXVII.

Fig. 2, Male.—Fig. 3, Female.

Le Sarselle de Louisiane, *Briss.* vi. p. 461, Pl. 41, fig. 1.—Le petit Canard à grosse tête, *Buff.* ix. p. 249.—*Edwards*, ii. p. 100.—*Catesby*, i. 95.—*Lath. Syn.* iii. p. 533.—*A. bucephala*, *id.* p. 121, No. 21 ; *A. rustica*, *id.* p. 524, No. 24.—*Peale's Museum*, No. 2730 ; female, 2731.

CLANGULA ALBEOLA.—BOIE.

Fuligula albeola, *Bonap. Synop.* p. 394.—*Clangula albeola*, *North. Zool.* ii. p. 458.

THIS pretty little species, usually known by the name of the butter-box, or butter-ball, is common to the sea-shores, rivers, and lakes of the United States, in every quarter of the country, during autumn and winter. About the middle of April, or early in May, they retire to the north to breed. They are dexterous divers, and fly with extraordinary velocity. So early as the latter part of February, the males are observed to have violent disputes for the females. At this time they are more commonly seen in flocks, but, during the preceding part of winter, they usually fly in pairs. Their note is a short *quak*. They feed much on shell-fish, shrimps, &c. They are sometimes exceedingly fat, though their flesh is inferior to many others for the table. The male exceeds the female in size, and greatly in beauty of plumage.

The buffel-headed duck, or rather, as it has originally been, the buffalo-headed duck, from the disproportionate size of its head, is fourteen inches long, and twenty-three inches in extent ; the bill is short, and of a light blue, or leaden colour ; the plumage of the head and half of the neck is thick, long, and velvety, projecting greatly over the lower part of the neck ; this plumage on the forehead and nape is rich glossy green, changing into a shining purple on the crown and sides of the neck ; from the eyes backward passes a broad band of pure white ; iris of the eye, dark ; back, wings, and part of the scapulars, black ; rest of the scapulars, lateral band

along the wing, and whole breast, snowy white ; belly, vent, and tail-coverts, dusky white ; tail, pointed, and of a hoary colour.

The female is considerably less than the male, and entirely destitute of the tumid plumage of the head ; the head, neck, and upper parts of the body, and wings, are sooty black, darkest on the crown ; side of the head marked with a small oblong spot of white ; bill, dusky ; lower part of the neck, ash, tipped with white ; belly, dull white ; vent, cinereous ; outer edges of six of the secondaries and their incumbent coverts, white, except the tips of the latter, which are black ; legs and feet, a livid blue ; tail, hoary brown ; length of the intestines, three feet six inches ; stomach filled with small shell-fish. This is the spirit duck of Pennant, so called from its dexterity in diving (*Arctic Zoology*, No. 487), likewise the little brown duck of Catesby (*Natural History of Carolina*, pl. 98).

This species is said to come into Hudson's Bay, about Severn River, in June, and make their nests in trees in the woods near ponds.* The young males, during the first year, are almost exactly like the females in colour.

* LATHAM.

CANADA GOOSE.—ANAS CANADENSIS.—PLATE LXVII. FIG. 4.

L'Oye sauvage de Canada, *Briss.* vi. p. 272, 4. pl. 26.—L'Oie à cravatte, *Buff.* ix. p. 82.—*Edw.* pl. 151.—*Arct. Zool.* No. 471.—*Catesby*, i. pl. 92.—*Lath. Syn.* iii. p. 450.—*Peale's Museum*, No. 2704.

ANSER CANADENSIS.—VIEILLOT.*

Bernicla Canadensis, *Boie.*—*Anser Canadensis*, *Bonap. Synop.* p. 377.—*North. Zool.* ii. p. 468.—L. Outarde, *French Canadians.*—Bustard, *Huds. B. Settlers.*

THIS is the common wild goose of the United States, universally known over the whole country; whose regular periodical migrations are the sure signals of returning spring, or approaching winter. The tracts of their vast migratory journeys are not confined to the sea-coast, or its vicinity. In their aerial voyages to and from the north, these winged pilgrims pass over the interior on both sides of the mountains, as far west, at least, as the Osage river, and I have never yet visited any

* The appellation "*geese*," will mark, in a general way, the birds and form to which *Anser* should be generically applied. They are all of large size, possess in part the gait of a gallinaceous bird, are gregarious, except during the breeding season, mostly migratory, and are formed more for extensive flight than for the life of a truly aquatic feeding and diving bird. Most of them during winter, at times leave the sea or lakes, and feed on the pastures, or, when to be had, on the newly sprung grains, while some feed entirely on aquatic plants and animals. The Canada goose is easily domesticated, and it is probable that most of the specimens killed in Great Britain have escaped from preserves; it is found, however, on the Continent of Europe, and stragglers may occasionally occur.

On the beautiful piece of water at Gosford House, the seat of the Earl of Wemyss, Haddingtonshire, this and many other water birds rear their young freely. I have never seen any artificial piece of water so beautifully adapted for the domestication and introduction of every kind of water fowl which will bear the climate of Great Britain. Of very large extent, it is embosomed in beautiful shrubbery, perfectly reclusive, and, even in the nearly constant observance of a resident family, several exotic species seem to look on it as their own. The Canada and Egyptian geese both had young when I visited it, and the lovely *Anas (Dendronessa) sponsa* seemed as healthy as if in her native waters.—En.

quarter of the country where the inhabitants are not familiarly acquainted with the regular passing and repassing of the wild geese. The general opinion here is, that they are on their way to the lakes to breed; but the inhabitants on the confines of the great lakes that separate us from Canada, are equally ignorant with ourselves of the particular breeding places of those birds. There, their journey north is but commencing; and how far it extends it is impossible for us at present to ascertain, from our little acquaintance with these frozen regions. They were seen by Hearne in large flocks within the Arctic circle, and were then pursuing their way still farther north. Captain Phipps speaks of seeing wild geese feeding at the water's edge, on the dreary coast of Spitzbergen, in lat. $80^{\circ} 27'$. It is highly probable that they extend their migrations under the very pole itself, amid the silent desolation of unknown countries, shut out since creation from the prying eye of man by everlasting and insuperable barriers of ice. That such places abound with their suitable food, we cannot for a moment doubt; while the absence of their great destroyer, man, and the splendours of a perpetual day, may render such regions the most suitable for their purpose.

Having fulfilled the great law of nature, the approaching rigours of that dreary climate oblige these vast congregated flocks to steer for the more genial regions of the south. And no sooner do they arrive at those countries of the earth inhabited by man, than carnage and slaughter is commenced on their ranks. The English at Hudson's Bay, says Pennant, depend greatly on geese, and in favourable years kill three or four thousand, and barrel them up for use. They send out their servants as well as Indians, to shoot these birds on their passage. It is in vain to pursue them; they therefore form a row of huts, made of boughs, at musket shot distance from each other, and place them in a line across the vast marshes of the country. Each stand, or hovel, as they are called, is occupied by only a single person. These attend the flight of the birds, and, on their approach, mimic their cackle so well, that the

geese will answer, and wheel, and come nearer the stand. The sportsman keeps motionless, and on his knees, with his gun cocked the whole time, and never fires till he has seen the eyes of the geese. He fires as they are going from him, then picks up another gun that lies by him, and discharges that. The geese which he has killed he sets upon sticks, as if alive, to decoy others; he also makes artificial birds for the same purpose. In a good day, for they fly in very uncertain and unequal numbers, a single Indian will kill two hundred. Notwithstanding every species of goose has a different call, yet the Indians are admirable in their imitations of every one. The autumnal flight lasts from the middle of August to the middle of October; those which are taken in this season, when the frosts begin, are preserved in their feathers, and left to be frozen for the fresh provisions of the winter stock. The feathers constitute an article of commerce, and are sent to England.

The vernal flight of the geese lasts from the middle of April until the middle of May. Their first appearance coincides with the thawing of the swamps, when they are very lean. Their arrival from the south is impatiently attended; it is the harbinger of the spring, and the month named by the Indians the goose moon. They appear usually at their settlements about St George's day, O. S., and fly northward, to nestle in security. They prefer islands to the continent, as farther from the haunts of man.*

After such prodigious havoc as thus appears to be made among these birds, and their running the gauntlet, if I may so speak, for many hundreds of miles through such destructive fires, no wonder they should have become more scarce, as well as shy, by the time they reach the shores of the United States.

Their first arrival on the coast of New Jersey is early in October, and their first numerous appearance is the sure prognostic of severe weather. Those which continue all winter frequent the shallow bays and marsh islands; their principal

* *Arctic Zoology.*

food being the broad tender green leaves of a marine plant which grows on stones and shells, and is usually called sea cabbage; and also the roots of the sedge, which they are frequently observed in the act of tearing up. Every few days they make an excursion to the inlets on the beach for gravel. They cross, indiscriminately, over land or water, generally taking the nearest course to their object; differing in this respect from the brant, which will often go a great way round by water rather than cross over the land. They swim well; and, if wing-broken, dive and go a long way under water, causing the sportsman a great deal of fatigue before he can kill them. Except in very calm weather, they rarely sleep on the water, but roost all night in the marshes. When the shallow bays are frozen, they seek the mouths of inlets near the sea, occasionally visiting the air holes in the ice; but these bays are seldom so completely frozen as to prevent them from feeding on the bars.

The flight of the wild geese is heavy and laborious, generally in a straight line, or in two lines approximating to a point, thus, \succ ; in both cases, the van is led by an old gander, who, every now and then, pipes his well-known *honk*, as if to ask how they come on, and the honk of "all's well" is generally returned by some of the party. Their course is in a straight line, with the exception of the undulations of their flight. When bewildered in foggy weather, they appear sometimes to be in great distress, flying about in an irregular manner, and for a considerable time over the same quarter, making a great clamour. On these occasions, should they approach the earth, and alight, which they sometimes do, to rest and recollect themselves, the only hospitality they meet with is death and destruction from a whole neighbourhood already in arms for their ruin.

Wounded geese have, in numerous instances, been completely domesticated, and readily pair with the tame grey geese. The offspring are said to be larger than either; but the characteristic marks of the wild goose still predominate.

The gunners on the sea-shore have long been in the practice of taming the wounded of both sexes, and have sometimes succeeded in getting them to pair and produce. The female always seeks out the most solitary place for her nest, not far from the water. On the approach of every spring, however, these birds discover symptoms of great uneasiness, frequently looking up into the air, and attempting to go off. Some whose wings have been closely cut, have travelled on foot in a northern direction, and have been found at the distance of several miles from home. They hail every flock that passes overhead, and the salute is sure to be returned by the voyagers, who are only prevented from alighting among them by the presence and habitations of man. The gunners take one or two of these domesticated geese with them to those parts of the marshes over which the wild ones are accustomed to fly; and, concealing themselves within gunshot, wait for a flight, which is no sooner perceived by the decoy geese, than they begin calling aloud, until the whole flock approaches so near as to give them an opportunity of discharging two and sometimes three loaded muskets among it, by which great havoc is made.

The wild goose, when in good order, weighs from ten to twelve, and sometimes fourteen pounds. They are sold in the Philadelphia markets at from seventy-five cents to one dollar each; and are estimated to yield half a pound of feathers a piece, which produces twenty-five or thirty cents more.

The Canada goose is now domesticated in numerous quarters of the country, and is remarked for being extremely watchful, and more sensible of approaching changes in the atmosphere than the common grey goose. In England, France, and Germany, they have also been long ago domesticated. Buffon, in his account of this bird, observes, "within these few years, many hundreds inhabited the great canal at Versailles, where they breed familiarly with the swans; they were oftener on the grassy margins than in the water;" and adds, "there is at present a great number of them on the magnificent pools that decorate the charming gardens of Chantilly." Thus has

America already added to the stock of domestic fowls two species, the turkey and the Canada goose, superior to most in size, and inferior to none in usefulness; for it is acknowledged by an English naturalist, of good observation, that this last species "is as familiar, breeds as freely, and is in every respect as valuable as the common goose."*

The strong disposition of the wounded wild geese to migrate to the north in spring, has been already taken notice of. Instances have occurred where, their wounds having healed, they have actually succeeded in mounting into the higher regions of the air, and joined a passing party to the north; and, extraordinary as it may appear, I am well assured by the testimony of several respectable persons, who have been eye-witnesses to the fact, that they have been also known to return again in the succeeding autumn to their former habitation. These accounts are strongly corroborated by a letter which I some time ago received from an obliging correspondent at New York; which I shall here give at large, permitting him to tell his story in his own way, and conclude my history of this species:—

"Mr Platt, a respectable farmer on Long Island, being out shooting in one of the bays, which, in that part of the country, abound with water-fowl, wounded a wild goose. Being wing-tipped, and unable to fly, he caught it, and brought it home alive. It proved to be a female; and, turning it into his yard, with a flock of tame geese, it soon became quite tame and familiar, and in a little time its wounded wing entirely healed. In the following spring, when the wild geese migrate to the northward, a flock passed over Mr Platt's barn-yard; and, just at that moment, their leader happening to sound his bugle note, our goose, in whom its new habits and enjoyments had not quite extinguished the love of liberty, and remembering the well-known sound, spread its wings, mounted into the air, joined the travellers, and soon disappeared. In the succeeding autumn, the wild geese, as was usual, returned from the north-

* BEWICK, vol. ii. p. 255.

ward in great numbers, to pass the winter in our bays and rivers. Mr Platt happened to be standing in his yard when a flock passed directly over his barn. At that instant, he observed three geese detach themselves from the rest, and, after wheeling round several times, alight in the middle of the yard. Imagine his surprise and pleasure, when, by certain well remembered signs, he recognised in one of the three his long lost fugitive. It was she indeed ! She had travelled many hundred miles to the lakes ; had there hatched and reared her offspring ; and had now returned with her little family, to share with them the sweets of civilized life.

“ The truth of the foregoing relation can be attested by many respectable people, to whom Mr Platt has related the circumstances as above detailed. The birds were all living, and in his possession, about a year ago, and had shown no disposition whatever to leave him.”

The length of this species is three feet ; extent, five feet two inches ; the bill is black ; irides, dark hazel ; upper half of the neck, black, marked on the chin and lower part of the head with a large patch of white, its distinguishing character ; lower part of the neck before, white ; back and wing-coverts, brown, each feather tipped with whitish ; rump and tail, black ; tail-coverts and vent, white ; primaries, black, reaching to the extremity of the tail ; sides, pale ashy brown ; legs and feet, blackish ash.

The male and female are exactly alike in plumage.

TUFTED DUCK.—ANAS FULIGULA.—PLATE LXVII. FIG. 5. MALE.

FULIGULA RUFITORQUES.—BONAPARTE.

Fuligula rufitorques, *Bonap. Journ. Acad. Nat. Sc. Phil.*—*Synop.* p. 393.—
North. Zool. ii. p. 453.

THIS is an inhabitant of both continents ; it frequents fresh water rivers, and seldom visits the sea-shore. It is a plump, short-bodied duck ; its flesh generally tender and well tasted. They are much rarer than most of our other species, and are seldom seen in market. They are most common about the beginning of winter, and early in the spring. Being birds of passage, they leave us entirely during the summer.

The tufted duck is seventeen inches long, and two feet two inches in extent ; the bill is broad, and of a dusky colour, sometimes marked round the nostrils and sides with light blue ; head, crested, or tufted, as its name expresses, and of a black colour, with reflections of purple ; neck marked near its middle by a band of deep chestnut ; lower part of the neck, black, which spreads quite round to the back ; back and scapulars, black, minutely powdered with particles of white, not to be observed but on a near inspection ; rump and vent, also black ; wings, ashy brown ; secondaries, pale ash, or bluish white ; tertials, black, reflecting green ; lower part of the breast and whole belly, white ; flanks crossed with fine zigzag lines of dusky ; tail, short, rounded, and of a dull brownish black ; legs and feet, greenish ash ; webs, black ; irides, rich orange ; stomach filled with gravel and some vegetable food.

In young birds, the head and upper part of the neck are purplish brown ; in some, the chestnut ring on the fore part of the middle of the neck is obscure, in others very rich and glossy, and, in one or two specimens which I have seen, it is altogether wanting. The back is in some instances destitute

of the fine powdered particles of white, while in others these markings are large and thickly interspersed.

The specimen from which the drawing was taken, was shot on the Delaware, on the 10th of March, and presented to me by Dr S. B. Smith of this city. On dissection, it proved to be a male, and was exceeding fat and tender. Almost every specimen I have since met with has been in nearly the same state; so that I cannot avoid thinking this species equal to most others for the table, and greatly superior to many.

GOLDEN-EYE.—ANAS CLANGULA.—PLATE LXVII. FIG. 6. MALE.

Le Garrot, *Briss.* vi. p. 416, pl. 37. fig. 2.—*Buff.* ix. p. 222.—*Arct. Zool.* No. 486.—*Lath. Syn.* iii. p. 535.

CLANGULA VULGARIS.—FLEMING.*

Clangula vulgaris, *Flem. Br. Anim.* p. 120.—*North. Zool.* ii. p. 454.—*Fuligula clangula*, *Bonap. Synop.* p. 393.—Sub-gen. *Clangula*.

THIS duck is well known in Europe, and in various regions of the United States, both along the sea-coast and about the

* The golden-eye is found on both continents, and in the northern parts of Europe during winter, is one of the most common migratory ducks. The garrots are distinguished by a short, stout, and compact body; the neck short; the head large, and apparently more so from its thick plumage; the bill short, but thick and raised at the base; the feet placed far behind, and formed for swimming. The flight is short and rapid. In habit, they delight more in lakes and rivers than the sea; are generally found in small flocks; are very clamorous during the breeding season, and feed on fish, aquatic insects, molluscs, &c. Richardson says, "*Clangula vulgaris* and *albeola* frequent the rivers and fresh-water lakes throughout the fur countries, in great numbers. They are by no means shy, allowing the sportsman to approach sufficiently near; but dive so dexterously at the flash of the gun, or the twanging of a bow, and are consequently so difficult to kill, that the natives say they are endowed with some supernatural power. Hence their appellation of "conjuring," or "spirit ducks."

In Britain, they are winter visitants, assembling in small parties on the lakes

lakes and rivers of the interior. It associates in small parties, and may easily be known by the vigorous whistling of its wings as it passes through the air. It swims and dives well, but seldom walks on shore, and then in a waddling, awkward manner. Feeding chiefly on shell-fish, small fry, &c., their flesh is less esteemed than that of the preceding. In the United States they are only winter visitors, leaving us again in the month of April, being then on their passage to the north to breed. They are said to build, like the wood duck, in hollow trees.

The golden-eye is nineteen inches long, and twenty-nine

and rivers. On the latter, they may be generally found near the head or foot of the stream, diving incessantly for the spawn of salmon, with which I have often found their stomach filled. The party generally consists of from four to ten, and they dive together. At this time, it is not very difficult to approach them, by running forward while they are under water, and squatting when they rise. I have often, in this way, come to the very edge of the river, and awaited the arising of the flock. When taken by surprise, they dive on the instant of the first shot, but rise and fly immediately after.

The young of the first year has been made a nominal species, and is somewhat like the adult females, but always distinguished by larger size, darker colour of the plumage of the head, and the greater proportion of white on the wings. The males have the white spot on the cheek perceptible about the first spring, and the other parts of the plumage proportionally distinct. Among most of the flocks which visit our rivers in winter, it is rare to find more than one full plumaged male in each, sometimes not more than two or three are seen during the winter among fifty or sixty immature birds.

The American ducks belonging to this group are *C. vulgaris albeola* and *C. Barrovii*, or Rocky Mountain garrot, a new species, discovered by the overland Arctic expedition, and described and figured in the *Northern Zoology*. The following is the description; it has only yet been found in the valleys of the Rocky Mountains.

“Notwithstanding the general similarity in the form and markings of this bird, and the common golden-eye, the difference in their bills evidently points them out to be a distinct species. The Rocky Mountain garrot is distinguished by the pure colour of its dorsal plumage, and the smaller portion of white on its wings and scapulars; its long flank feathers are also much more broadly bordered all round with black. The bases of the greater coverts in the golden-eye are black; but they are concealed, and do not form the black band so conspicuous in this species.” The total length of a male brought home by the expedition was twenty-two inches in length.—Ed.

in extent, and weighs on an average about two pounds; the bill is black, short, rising considerably up in the forehead; the plumage of the head and part of the neck is somewhat tumid, and of a dark green, with violet reflections, marked near the corner of the mouth with an oval spot of white; the irides are golden yellow; rest of the neck, breast, and whole lower parts, white, except the flanks, which are dusky; back and wings, black; over the latter a broad bed of white extends from the middle of the lesser coverts to the extremity of the secondaries; the exterior scapulars are also white; tail, hoary brown; rump and tail-coverts, black; legs and toes, reddish orange; webs very large, and of a dark purplish brown; hind toe and exterior edge of the inner one, broadly finned; sides of the bill, obliquely dentated; tongue, covered above with a fine thick velvety down, of a whitish colour.

The full plumaged female is seventeen inches in length, and twenty-seven inches in extent; bill, brown, orange near the tip; head and part of the neck, brown, or very dark drab, bounded below by a ring of white; below that the neck is ash, tipped with white; rest of the lower parts, white; wings, dusky, six of the secondaries and their greater coverts, pure white, except the tips of the last, which are touched with dusky spots; rest of the wing-coverts, cinereous, mixed with whitish; back and scapulars, dusky, tipped with brown; feet, dull orange; across the vent, a band of cinereous; tongue, covered with the same velvety down as the male.

The young birds of the first season very much resemble the females, but may generally be distinguished by the white spot, or at least its rudiments, which marks the corner of the mouth. Yet, in some cases, even this is variable, both old and young male birds occasionally wanting the spot.

From an examination of many individuals of this species of both sexes, I have very little doubt that the morillon of English writers (*Anas glaucion*), is nothing more than the young male of the golden-eye.

The conformation of the trachea, or windpipe, of the male

of this species, is singular : Nearly about its middle it swells out to at least five times its common diameter, the concentric hoops or rings, of which this part is formed, falling obliquely into one another when the windpipe is relaxed ; but when stretched, this part swells out to its full size, the rings being then drawn apart ; this expansion extends for about three inches ; three more below this, it again forms itself into a hard cartilaginous shell of an irregular figure, and nearly as large as a walnut ; from the bottom of this labyrinth, as it has been called, the trachea branches off to the two lobes of the lungs ; that branch which goes to the left lobe being three times the diameter of the right. The female has nothing of all this. The intestines measure five feet in length, and are large and thick.

I have examined many individuals of this species, of both sexes and in various stages of colour, and can therefore affirm, with certainty, that the foregoing descriptions are correct. Europeans have differed greatly in their accounts of this bird, from finding males in the same garb as the females, and other full plumaged males destitute of the spot of white on the cheek ; but all these individuals bear such evident marks of belonging to one peculiar species, that no judicious naturalist, with all these varieties before him, can long hesitate to pronounce them the same.

SHOVELLER—ANAS CLYPEATA.—PLATE LXVII. FIG. 7. MALE.

Le Souchet, *Briss.* vi. p. 329. 6. pl. 32. fig. 1.—*Buff.* ix. 191.—*Pl. Enl.* 971.
—*Arct. Zool.* No. 485. *Catesby*, i. pl. 96; female.—*Lath. Syn.* iii. p. 509.—*Peale's Museum*, No. 2734.

ANAS CLYPEATA.—LINNÆUS.*

Anas platyrhynchos, *Raii Synop.* p. 144.—*Rynchaspis clypeata*, *Leach.*—*Shaw's Zool.*—*Steph. Cont.* xii. 115. pl. 48.—*Spathulea clypeata*, *Flem. Brit. Anim.* i. 123.—*Anas clypeata*, *Lath. Ind. Ornith.* ii. p. 856.—*Shoveller*, *Mont. Ornith. Dict. and Sup.*—*Bew.* ii. 345.—*Selby, m. and f. Illust.* pl. 48.—*Canard souchet*, *Tem. Man.* ii. p. 842.—*Anas clypeata*, *Bonap. Synop.* p. 382.—*North. Zool.* ii. p. 439.

IF we except the singularly formed and disproportionate size of the bill, there are few ducks more beautiful or more

* Mr Swainson, according to his views that the typical group should hold the typical name of the family, has restricted *Anas* (in that sense) to the shovellers. In fixing upon the typical representation of any large family, that gentleman goes upon the principle of taking the organ most peculiarly important to the whole, and selects that subordinate, or rather primary group, wherein that organ is most fully developed. Thus, in the ducks, he remarks there is nothing peculiar in diving, or living both on land and water, or endowments for rapid flight, for many others possess like powers; but when we examine the dilated and softly textured bill, and more particularly the fine laminae on the edges, we are struck with a formation at variance with our accustomed ideas of that member, and at once think that it must be applied to something equally peculiar in their economy. We shall thus be warranted in taking the bill as our criterion, and those birds where we find its structure most fully developed for the type. These are most decidedly to be seen in the shovellers, a group containing, as yet, only three or four known species; in them we have the utmost dilatation of the bill towards its apex, and the laminae upon its edges, and long and remarkably delicate. The bird itself possesses a powerful flight, and is a most expert diver and swimmer, but seems to prefer inland lakes or fens to the more open seas and rivers.

To this group will belong the curious pink-eared shoveller, from New Holland, remarkable from the tooth-like membrane projecting from the angles of the bill, and differing somewhat from the others in its brown and dusky plumage.

elegantly marked than this. The excellence of its flesh, which is uniformly juicy, tender, and well tasted, is another recommendation to which it is equally entitled. It occasionally visits the sea-coast, but is more commonly found on our lakes and rivers, particularly along their muddy shores, where it spends great part of its time in searching for small worms, and the larvæ of insects, sifting the watery mud through the long and finely set teeth of its curious bill, which is admirably constructed for the purpose, being large, to receive a considerable quantity of matter, each mandible bordered with close-set, pectinated rows, exactly resembling those of a weaver's reed, which, fitting into each other, form a kind of sieve, capable of retaining very minute worms, seeds, or insects, which constitute the principal food of the bird.

The shoveller visits us only in the winter, and is not known to breed in any part of the United States. It is a common bird of Europe, and, according to M. Baillon, the correspondent of Buffon, breeds yearly in the marshes in France. The female is said to make her nest on the ground, with withered grass, in the midst of the largest tufts of rushes or coarse herbage, in the most inaccessible part of the slaky marsh, and lays ten or twelve pale rust-coloured eggs; the young, as soon as hatched, are conducted to the water by the parent birds. They are said to be at first very shapeless and ugly, for the bill is then as broad as the body, and seems too great a weight for the little bird to carry. Their plumage does not acquire its full colours until after the second moult.

The blue-winged shoveller is twenty inches long, and two feet six inches in extent; the bill is brownish black, three inches in length, greatly widened near the extremity, closely pectinated on the sides, and furnished with a nail on the tip of each

Mr Swainson has formed on account of this membrane a sub-genus, *malacorhynchus*, but in which I am hardly yet prepared to coincide.

It may be mentioned here, that the only birds which possess the lamellated structure of the upper mandible is *pachyptila*, a genus coming near to the peterels, and *phænicopterus* of Flamingo.—ED.

mandible; irides, bright orange; tongue, large and fleshy; the inside of the upper and outside of the lower mandible are grooved, so as to receive distinctly the long separated reedlike teeth; there is also a gibbosity in the two mandibles, which do not meet at the sides, and this vacuity is occupied by the sifters just mentioned; head and upper half of the neck, glossy, changeable green; rest of the neck and breast, white, passing round and nearly meeting above; whole belly, dark reddish chestnut; flanks, a brownish yellow, pencilled transversely with black, between which and the vent, which is black, is a band of white; back, blackish brown; exterior edges of the scapulars, white; lesser wing-coverts, and some of the tertials, a fine light sky blue; beauty spot on the wing, a changeable resplendent bronze green, bordered above by a band of white, and below with another of velvety black; rest of the wing, dusky, some of the tertials streaked down their middles with white; tail, dusky, pointed, broadly edged with white; legs and feet, reddish orange, hind toe not finned.

With the above another was shot, which differed in having the breast spotted with dusky, and the back with white; the green plumage of the head intermixed with gray, and the belly with circular touches of white, evidently a young male in its imperfect plumage.

The female has the crown of a dusky brown; rest of the head and neck, yellowish white, thickly spotted with dark brown; these spots on the breast become larger, and crescent shaped; back and scapulars, dark brown, edged and centred with yellow ochre; belly, slightly rufous, mixed with white; wing, nearly as in the male.

On dissection, the labyrinth in the windpipe of the male was found to be small; the trachea itself seven inches long; the intestines nine feet nine inches in length, and about the thickness of a crow quill.

GOOSANDER—MERGUS MERGANSER.—PLATE LXVIII. FIG. 1.

MALE.

L'Harle, *Briss.* vi. p. 231, 1. pl. 22.—*Buff.* viii. p. 267, pl. 23.—*Arct. Zool.* 465.
 —*Lath. Syn.* iii. p. 418.—*Peale's Museum*, No. 2932.

MERGUS MERGANSER.—LINNÆUS.*

Goosander, or Merganser, *Mont. Ornith. Dict. and Supp.*—*Bew. Br. Birds*, ii. p. 254.—*Selby's Illust.* pl. 57.—*Mergus merganser*, *Bonap. Synop.* p. 397.—*Flem. Br. Anim.* p. 128.—*Grande harle*, *Temm. Man. d'Ornith.* ii. 881.

THIS large and handsomely marked bird belongs to a genus different from that of the duck, on account of the particular

* The genus *Mergus* has been universally allowed. It contains nine or ten species, allied in their general form, but easily distinguished by their plumage. They are truly aquatic, and never quit the sea or lakes except for a partial repose or pluming, or during the time of incubation. Their food is entirely fish, and they are necessarily expert divers; the bill is lengthened and narrow, its edges regularly serrated with recurved points. The breeding places of many of them are yet unknown, but I believe that the greater proportion at that season retire inland to the more sequestered lakes. I am also of opinion that the male forsakes his mate so soon as she begins to sit, about which time he also loses the beautiful crest and plumage in which he is clothed during winter and spring, and assumes a duller garb. The males are remarkable for their difference from the other sex, whence the long-disputed point, now satisfactorily proved, of this and the following bird being different. That of the male is generally black, or glossy green, contrasted with the purest white, or rich shades of tawny yellow; that of the females, the chaster grays and browns. Both are furnished with crests, composed of loose hackled feathers.

The distribution of the group seems to be European, and both continents of America. I have seen none from India or New Holland, though from the former country they might be expected.

The goosander is a native of both continents, and is said to breed in the northern parts of Scotland. This I have had no opportunity of verifying. It is frequent during winter on the larger rivers, in flocks of seven or eight, in which there is generally only one, or, at most, two adult males—the others being in immature dress, or females; thus, the latter is said to be the most common. They fish about the bottoms of the streams and pools, and, I believe, destroy many fish.

form and serratures of its bill. The genus is characterised as follows:—"Bill, toothed, slender, cylindrical, hooked at the point; nostrils, small, oval, placed in the middle of the bill; feet, four-toed, the outer toe longest." Naturalists have denominated it *merganser*. In this country, the birds composing this genus are generally known by the name of fisherman, or fisher ducks. The whole number of known species amount to only nine or ten, dispersed through various quarters of the world; of these, four species, of which the present is the largest, are known to inhabit the United States.

From the common habit of these birds in feeding almost entirely on fin and shell-fish, their flesh is held in little estimation, being often lean and rancid, both smelling and tasting strongly of fish; but such are the various peculiarities of tastes, that persons are not wanting who pretend to consider them capital meat.

The goosander, called by some the water pheasant, and by others the sheldrake, fisherman, diver, &c., is a winter inhabitant only of the sea-shores, fresh water lakes, and rivers of the United States. They usually associate in small parties of six or eight, and are almost continually diving in search of food. In the month of April they disappear, and return again early in November. Of their particular place, and manner of breeding, we have no account. Mr Pennant observes, that they continue the whole year in the Orkneys; and have been shot in the Hebrides, or Western Islands of Scotland, in summer. They are also found in Iceland and Greenland, and are said to breed there; some asserting that they build on trees; others, that they make their nests among the rocks.

The male of this species is twenty-six inches in length, and three feet three inches in extent; the bill, three inches long,

I have taken seven trout, about four or five inches in length, from the stomach of a female.

In Hudson's Bay (according to Hearne) they are called sheldrakes; the name by which they are also distinguished by the common people in all the rivers in the south of Scotland.—ED.

and nearly one inch thick at the base, serrated on both mandibles; the upper overhanging at the tip, where each is furnished with a large nail; the ridge of the bill is black; the sides, crimson red; irides, red; head, crested, tumid, and of a black colour, glossed with green, which extends nearly half way down the neck, the rest of which, with the breast and belly, are white, tinged with a delicate yellowish cream; back, and adjoining scapulars, black; primaries, and shoulder of the wing, brownish black; exterior part of the scapulars, lesser coverts, and tertials, white; secondaries, neatly edged with black; greater coverts, white; their upper halves, black, forming a bar on the wing; rest of the upper parts, and tail, brownish ash; legs and feet, the colour of red sealing-wax; flanks, marked with fine semicircular dotted lines of deep brown; the tail extends about three inches beyond the wings.

This description was taken from a full-plumaged male. The young males, which are generally much more numerous than the old ones, so exactly resemble the females in their plumage for at least the first, and part of the second year, as scarcely to be distinguished from them; and, what is somewhat singular, the crests of these and of the females are actually longer than those of the full-grown male, though thinner towards its extremities. These circumstances have induced some late ornithologists to consider them as two different species, the young, or female, having been called the dun diver. By this arrangement, they have entirely deprived the goosander of his female; for, in the whole of my examinations and dissections of the present species, I have never yet found the female in his dress. What I consider as undoubtedly the true female of this species, is figured beside him. They were both shot in the month of April, in the same creek, unaccompanied by any other; and, on examination, the sexual parts of each were strongly and prominently marked. The windpipe of the female had nothing remarkable in it; that of the male had two very large expansions, which have been briefly described by Willoughby, who

says: "It hath a large bony labyrinth on the windpipe, just above the divarications; and the windpipe hath, besides, two swellings out, one above another, each resembling a powder puff." These labyrinths are the distinguishing characters of the males; and are always found, even in young males who have not yet thrown off the plumage of the female, as well as in the old ones. If we admit these dun divers to be a distinct species, we can find no difference between their pretended females and those of the goosander, only one kind of female of this sort being known; and this is contrary to the usual analogy of the other three species, viz. the red-breasted merganser, the hooded, and the smew, all of whose females are well known, and bear the same comparative resemblance in colour to their respective males, the length of crest excepted, as the female goosander here figured bears to him.

Having thought thus much necessary on this disputed point, I leave each to form his own opinion on the facts and reasoning produced.

[* The goosander is a broad, long-bodied, and flat-backed bird. It is a great diver, and remains under water for a considerable time. It is very shy, and hard to be obtained, unless there is ice in the river, at which time it may be approached by stratagem, the shooter and his boat being clothed in white, so as to resemble floating ice. It appears to live chiefly upon fish, which its sharp-toothed and hooked bill is admirably calculated for securing. It rises from the water with considerable fluttering, its wings being small and short; but, when in the air, it flies with great swiftness. It is a singular circumstance, that those goosanders which are seen in the Delaware and Schuylkill, in the vicinity of Philadelphia, are principally old males.

The male goosander is twenty-six inches in length, and thirty-seven inches in breadth; the bill, to the angles of the

* From this to the end of the article, marked off with brackets, is an addition to Wilson's description by Mr Ord.—Ed.

mouth, is three inches long, nearly an inch thick at the base, strongly toothed on both mandibles, the upper mandible with two corresponding rows of fine teeth within, the lower divided to the nail, and connected by a thin elastic membrane, which admits of considerable expansion, to facilitate the passage of fish ; nostrils, sub-ovate, broader on the hind part ; the bill is black above and below, its sides crimson ; the tongue is long, pointed, furnished with a double row of papillæ running along the middle, and has a hairy border ; irides, golden ; the frontlet, lores, area of the eyes, and throat, jet black ; head, crested, tumid, and of a beautiful glossy bottle-green colour, extending nearly half-way down the neck, the remainder of which, with the exterior part of the scapulars, the lesser coverts, the greater part of the secondaries, the tertials and lining of the wings, white, delicately tinged with cream colour ; the breast and whole lower parts are of a rich cream colour ; the upper part of the back, and the interior scapulars, a fine glossy black ; the primaries and exterior part of the secondaries, with their coverts, are brownish black ; the lower part of nearly all the coverts of the secondaries, white, the upper part, black, forming a bar across the wing ; the shoulder of the wing is brownish ash, the feathers tipped with black ; the middle and lower parts of the back and tail-coverts, ash, the plumage centred with brown ; tail, brownish ash, rounded, composed of eighteen feathers, and extends about three inches beyond the wings ; the flanks are marked with waving, finely dotted lines of ash on a white ground ; tertials on the outer vanes, edged with black ; the legs and feet are of a rich orange ; toes, long, middle one somewhat the longest ; claws, flesh-coloured. The whole plumage is of a silky softness, particularly that of the head and neck, which feels like the most delicate velvet.

Naturalists represent the feet and legs of this species as of the colour of red sealing wax. This is an error which arose from the circumstance of their having seen their specimens some time after they had been killed. When the bird is alive,

these parts are of a beautiful orange, which changes after death to the colour they mention.

The above description was taken from a fine full-plumaged male, which was shot in the vicinity of Philadelphia in the month of January. It was in good condition, and weighed three pounds thirteen ounces avoirdupois.]

FEMALE GOOSANDER.—PLATE LXVIII. FIG. 2.

Peale's Museum, No. 2933.—Dun Diver, *Lath. Syn.* iii. p. 240.—*Arct. Zool.* No. 465.—*Bewick's Brit. Birds*, ii. p. 23.—*Turt. Syst.* p. 335.—L'Harle femelle, *Briss.* vi. p. 236.—*Buff.* viii. p. 272.—*Pl. Enl.* 953.

MERGUS MERGANSER.—LINNÆUS.

Syn. of Fem. or Young. *Mergus castor*, *Linn. Syst.* i. 209.—*Merganser cinereus*, *Briss. Orn.* vi. 254.—Dun Diver, or Sparling Fowl, *Mont. Bew. &c.*—Goosander Female, *Selby's Illust.* pl. LVII.

THIS generally measures an inch or two shorter than the male; the length of the present specimen was twenty-five inches; extent, thirty-five inches; bill, crimson on the sides, black above; irides, reddish; crested head and part of the neck, dark brown, lightest on the sides of the neck, where it inclines to a sorrel colour; chin and throat, white; the crest shoots out in long radiating flexible stripes; upper part of the body, tail, and flanks, an ashy slate, tinged with brown; primaries, black; middle secondaries, white, forming a large speculum on the wing; greater coverts, black, tipped for half an inch with white; sides of the breast, from the sorrel-coloured part of the neck downwards, very pale ash, with broad semi-circular touches of white; belly and lower part of the breast, a fine yellowish cream colour—a distinguishing trait also in the male; legs and feet, orange red.

[It is truly astonishing with what pertinacity Montagu adheres to the opinion that the dun diver is a species distinct from the goosander. Had this excellent ornithologist had the same opportunities for examining these birds that we have, he would

never have published an opinion, which, in this quarter of the globe, would subject one, even from the vulgar, to the imputation of ignorance.*]

PINTAIL DUCK—ANAS ACUTA.—PLATE LXVIII. FIG. 3

Le Canard à longue queue, *Briss.* vi. p. 369. 16. pl. 34. fig. 1, 2.—*Buff.* ix. p. 199, pl. 13.—*Pl. Enl.* 954.—*Arct. Zool.* No. 500.—*Lath. Syn.* iii. p. 526.—*Peale's Museum*, No. 2806.

DAFILA ACUTA.—LEACH,†

Dafila caudacuta, *Shaw's Zool.*—*Steph. Cont.* xii. p. 127.—Canard à longue queue au pillet, *Temm. Man. d'Ornith.* ii. 838.—Pintail, *Mont.*—*Bew.*—*Selby's Illust.* pl. 42. m.—*Anas acuta*, *Cracker.*—*Flem. Br. Anim.* p. 124.—*Bonap. Synop.* p. 383.—*Anas (dafila) caudacuta*, *North. Zool.* ii. p. 441.

THE pintail, or, as it is sometimes called, the sprigtail, is a common and well-known duck in our markets, much esteemed for the excellence of its flesh, and is generally in good order. It is a shy and cautious bird, feeds in the mud flats, and shallow fresh water marshes; but rarely resides on the sea-coast. It seldom dives, is very noisy, and has a kind of chattering note. When wounded, they will sometimes dive, and, coming up, conceal themselves under the bow of the boat, moving round as it moves. Are vigilant in giving the alarm on the approach of the gunner, who often curses the watchfulness of

* The concluding paragraph, marked off with brackets, is an addition by Mr Ord.

† In this beautiful species we have the type of the subgenus *Dafila*. In it the marginal laminæ begin to disappear, and the bill to assume what may be called a more regular outline, approaching to that of *A. boschas*, our wild and domestic breed. Another peculiarity is the developement of the tail, which becomes much lengthened, whence the name of *sea pheasant*. In this country they are not very common, which may arise from their being more difficult to procure, by their frequenting the sea rather than any inland water; they are frequently taken, however, in decoys, and I once shot two feeding in the evening on a wet stubble field in company with the common wild-duck.—ED.

the sprigtail. Some ducks, when aroused, disperse in different directions ; but the sprigtails, when alarmed, cluster confusedly together as they mount, and thereby afford the sportsman a fair opportunity of raking them with advantage. They generally leave the Delaware about the middle of March, on the way to their native regions, the north, where they are most numerous. They inhabit the whole northern parts of Europe and Asia, and, doubtless, the corresponding latitudes of America. Are said, likewise, to be found in Italy. Great flocks of them are sometimes spread along the isles and shores of Scotland and Ireland, and on the interior lakes of both these countries. On the marshy shores of some of the bays of Lake Ontario, they are often plenty in the months of October and November. I have also met with them at Louisville, on the Ohio.

The pintail duck is twenty-six inches in length, and two feet ten inches in extent ; the bill is a dusky lead colour ; irides, dark hazel ; head and half of the neck, pale brown, each side of the neck marked with a band of purple violet, bordering the white ; hind part of the upper half of the neck, black, bordered on each side by a stripe of white, which spreads over the lower part of the neck before ; sides of the breast and upper part of the back, white, thickly and elegantly marked with transverse undulating lines of black, here and there tinged with pale buff ; throat and middle of the belly, white, tinged with cream ; flanks, finely pencilled with waving lines ; vent, white ; under tail-coverts, black ; lesser wing-coverts, brown ash ; greater, the same, tipped with orange ; below which is the speculum, or beauty spot, of rich, golden green, bordered below with a band of black, and another of white ; primaries, dusky brown ; tertials, long, black, edged with white, and tinged with rust ; rump and tail-coverts, pale ash, centred with dark brown ; tail, greatly pointed, the two middle tapering feathers being full five inches longer than the others, and black, the rest, brown ash, edged with white ; legs, a pale lead colour.

The female has the crown of a dark brown colour ; neck, of

a dull brownish white, thickly speckled with dark brown; breast and belly, pale brownish white, interspersed with white; back, and root of the neck above, black, each feather elegantly waved with broad lines of brownish white, these wavings become rufous on the scapulars; vent white, spotted with dark brown; tail, dark brown, spotted with white; the two middle tail-feathers half an inch longer than the others.

The sprigtail is an elegantly formed, long bodied duck, the neck longer and more slender than most others.

BLUE-WINGED TEAL.—ANAS DISCORS.

PLATE LXVIII. FIG. 4.

Le Sarcelle d'Amerique, *Briss.* vi. p. 452, 35.—*Buff.* ix. p. 279. *Pl. Enl.* 966.
—*Catesby*, i. pl. 100.—White-faced duck, *Lath. Syn.* iii. p. 502.—*Arct. Zool.*
No. 503.—*Peale's Museum*, No. 2846.

BOSCHAS? DISCORS.—SWAINSON.

Anas discors, *Cuv. Regn. Anim.* i. p. 539.—*Bonap. Synop.* p. 385.—*Anas (boschas)*
discors, *Swain. Journ. Royal Instit.* No. iv. p. 22.—*North. Zool.* ii. p. 444.

THE blue-winged teal is the first of its tribe that returns to us in the autumn from its breeding place in the north. They are usually seen early in September, along the shores of the Delaware, where they sit on the mud close to the edge of the water, so crowded together that the gunners often kill great numbers at a single discharge. When a flock is discovered thus sitting and sunning themselves, the experienced gunner runs his batteau ashore at some distance below or above them, and, getting out, pushes her before him over the slippery mud, concealing himself all the while behind her; by this method he can sometimes approach within twenty yards of the flock, among which he generally makes great slaughter. They fly rapidly, and, when they alight, drop down suddenly, like the snipe or woodcock, among the reeds or on the mud. They feed chiefly on vegetable food, and are eagerly fond of the

seeds of the reeds or wild oats. Their flesh is excellent, and, after their residence for a short time among the reeds, becomes very fat. As the first frosts come on, they proceed to the south, being a delicate bird, very susceptible of cold. They abound in the inundated rice fields in the southern states, where vast numbers are taken in traps placed on small dry eminences that here and there rise above the water. These places are strewn with rice, and by the common contrivance called a *figure four*, they are caught alive in hollow traps. In the month of April they pass through Pennsylvania for the north, but make little stay at that season. I have observed them numerous on the Hudson opposite to the Katskill mountains. They rarely visit the sea shore.

This species measures about fourteen inches in length, and twenty-two inches in extent; the bill is long in proportion, and of a dark dusky slate; the front and upper part of the head, are black, from the eye to the chin is a large crescent of white, the rest of the head and half the neck are of a dark slate, richly glossed with green and violet, remainder of the neck and breast is black or dusky, thickly marked with semicircles of brownish white, elegantly intersected with each other; belly, pale brown, barred with dusky, in narrow lines; sides and vent, the same tint, spotted with oval marks of dusky; flanks elegantly waved with large semicircles of pale brown; sides of the vent pure white; under tail-coverts, black; back, deep brownish black, each feather waved with large semi-ovals of brownish white; lesser wing-coverts, a bright light blue; primaries, dusky brown; secondaries, black; speculum, or beauty spot, rich green; tertials, edged with black or light blue, and streaked down their middle with white; the tail, which is pointed, extends two inches beyond the wings; legs and feet, yellow, the latter very small; the two crescents of white, before the eyes, meet on the throat.

The female differs in having the head and neck of a dull dusky slate, instead of the rich violet of the male, the hind head is also whitish. The wavings on the back and lower parts more indistinct; wing nearly the same in both.

SNOW GOOSE.—ANAS HYPERBOREA.—PLATE LXVIII. FIG. 5.

MALE.

L'oye de Neige, *Briss.* vi. p. 288. 10.—White Brant, *Lawson's Carolina*, p. 157.—*Arct. Zool.* No. 477.—*Phil. Trans.* 62. p. 413.—*Lath. Syn.* iii. p. 445.—*Peale's Museum*, No. 2635.

ANSER HYPERBOREUS.—BONAPARTE.

Anser hyperboreus, *Bonap. Synop.* p. 376.—*North. Zool.* ii. p. 467.

THIS bird is particularly deserving of the farther investigation of naturalists ; for, if I do not greatly mistake, English writers have, from the various appearances which this species assumes in its progress to perfect plumage, formed no less than four different kinds, which they describe as so many distinct species, viz. the *snow goose*, the *white-fronted*, or *laughing goose*, the *bean goose*, and the *blue-winged goose*, all of which, I have little doubt, will hereafter be found to be nothing more than perfect and imperfect individuals, male and female, of the snow goose, now before us.*

This species, called on the sea-coast the red goose, arrives in the River Delaware, from the north, early in November, sometimes in considerable flocks, and is extremely noisy, their notes being shriller and more squeaking than those of the Canada, or common wild-goose. On their first arrival, they make but a short stay, proceeding, as the depth of winter approaches, farther to the south ; but from the middle of February, until

* Mr Ord, in his reprint, adds the following note:—" This conjecture of our author is partly erroneous. The snow goose, and the blue-winged goose, are synonymous ; but the other two named, are distinct species, the characters of which are well defined by late ornithologists."

The blue-winged goose is our present bird, in immature plumage, which they are said to retain for three years. The two other birds have since been added to the American Fauna. The young bird is described, page 112 of this volume.—Ed.

the breaking up of the ice in March, they are frequently numerous along both shores of the Delaware, about and below Reedy Island, particularly near Old Duck Creek, in the state of Delaware. They feed on the roots of the reeds there, tearing them up from the marshes like hogs. Their flesh, like most others of their tribe that feed on vegetables, is excellent.

The snow goose is two feet eight inches in length, and five feet in extent; the bill is three inches in length, remarkably thick at the base, and rising high in the forehead, but becomes small and compressed at the extremity, where each mandible is furnished with a whitish rounding nail; the colour of the bill is a purplish carmine; the edges of the two mandibles separate from each other in a singular manner for their whole length, and this gibbosity is occupied by dentated rows, resembling teeth, these, and the parts adjoining, being of a blackish colour; the whole plumage is of a snowy whiteness, with the exception, first, of the fore part of the head all round as far as the eyes, which is of a yellowish rust colour, intermixed with white; and, second, the nine exterior quill-feathers, which are black, shafted with white, and white at the root; the coverts of these last, and also the bastard wing, are sometimes of a pale ash colour; the legs and feet of the same purplish carmine as the bill; iris, dark hazel; the tail is rounded, and consists of sixteen feathers; that, and the wings, when shut, nearly of a length.

The bill of this bird is singularly curious; the edges of the upper and lower gibbosities have each twenty-three indentations, or strong teeth, on each side; the inside, or concavity of the upper mandible, has also seven lateral rows of strong projecting teeth; and the tongue, which is horny at the extremity, is armed on each side with thirteen long and sharp bony teeth, placed like those of a saw, with their points directed backwards; the tongue turned up, and, viewed on its lower side, looks very much like a human finger with its nail. This conformation of the mandibles, exposing two rows of strong teeth, has probably given rise to the epithet, laughing,

bestowed on one of its varieties, though it might with as much propriety have been named the grinning goose.

The specimen from which the above figure and description was taken, was shot on the Delaware, below Philadelphia, on the 15th of February, and on dissection proved to be a male; the windpipe had no labyrinth, but, for an inch or two before its divarication into the lungs, was inflexible, not extensile, like the rest, and rather wider in diameter. The gullet had an expansion before entering the stomach, which last was remarkably strong, the two great grinding muscles being nearly five inches in diameter. The stomach was filled with fragments of the roots of reeds, and fine sand. The intestines measured eight feet in length, and were not remarkably thick. The liver was small. For the young and female of this species, see plate lxix., fig. 5.

Latham observes that this species is very numerous at Hudson's Bay, that they visit Severn-River in May, and stay a fortnight, but go farther north to breed; they return to Severn Fort the beginning of September, and stay till the middle of October, when they depart for the south, and are observed to be attended by their young in flocks innumerable. They seem to occupy also the western side of America, as they were seen at Aoonalashka,* as well as Kamtschatka.† White brant, with black tips to their wings, were also shot by Captains Lewis and Clark's exploring party, near the mouth of the Columbia River, which were probably the same as the present species.‡ Mr Pennant says, "they are taken by the Siberians in nets, under which they are decoyed by a person covered with a white skin, and crawling on all-fours; when others driving them, these stupid birds mistaking him for their leader, follow him, when they are entangled in the nets, or led into a kind of pond made for the purpose!" We might here with propriety add—*this wants confirmation.*

* ELLIS's *Narrative*.

† *History of Kamtschatka.*

‡ GASS's *Journal*, p. 161.

HOODED MERGANSER—*MERGUS CUCULLATUS*.

PLATE LXIX. FIG. 1.

L'Harle huppé de Virginie, *Briss.* vii. p. 258. 8.—*Pl. Enl.* 935.—L'Harle couronné, *Buff.* viii. p. 280.—Round-crested duck, *Edw.* pl. 360.—*Catesby*, i. pl. 94.—*Arct. Zool.* No. 467.—*Lath. Syn.* 10. p. 426.—*Peale's Museum*, No. 2930.

MERGUS CUCULLATUS—LINNÆUS.

Mergus cucullatus, *Cuv. Regn. Anim.* i. p. 540.—*Bonap. Synop.* p. 397.—*Selby, Illust. Brit. Ornith.* pl. 58.

THIS species, on the sea-coast, is usually called the hairy head. They are more common, however, along our lakes and fresh-water rivers than near the sea; tracing up creeks, and visiting mill ponds, diving perpetually for their food. In the creeks and rivers of the southern states, they are very frequently seen during the winter. Like the red-breasted, they are migratory, the manners, food, and places of resort of both being very much alike.

The hooded merganser is eighteen inches in length, and two feet in extent; bill, blackish red, narrow, thickly toothed, and furnished with a projecting nail at the extremity; the head is ornamented with a large circular crest, which the bird has the faculty of raising or depressing at pleasure; the fore part of this, as far as the eye, is black, thence to the hind head, white, and elegantly tipped with black; it is composed of two separate rows of feathers, radiating from each side of the head, and which may be easily divided by the hand; irides, golden; eye, very small; neck, black, which spreads to and over the back; part of the lesser wing-coverts, very pale ash, under which the greater coverts and secondaries form four alternate bars of black and white; tertials, long, black, and streaked down the middle with white; the black on the back curves handsomely round in two points on the breast, which, with the whole lower

parts, are pure white; sides, under the wings and flanks, reddish brown, beautifully crossed with parallel lines of black; tail, pointed, consisting of twenty feathers of a sooty brown; legs and feet, flesh-coloured; claws, large and stout. The windpipe has a small labyrinth.

The female is rather less, the crest smaller, and of a light rust or dull ferruginous colour, entirely destitute of the white; the upper half of the neck, a dull drab, with semicircles of lighter, the white on the wings is the same as in the male, but the tertials are shorter and have less white; the back is blackish brown; the rest of the plumage corresponds very nearly with the male.

This species is peculiar to America;* is said to arrive at Hudson's Bay about the end of May; builds close to the lakes; the nest is composed of grass, lined with feathers from the breast; is said to lay six white eggs. The young are yellow, and fit to fly in July.†

RED-BREASTED MERGANSER—MERGUS SERRATOR.

PLATE LXIX. FIG. 2.

L'Harle huppé, *Briss.* vi. p. 237. 2. pl. 23.—*Buff.* viii. p. 273.—*Pl. Enl.* 207.—*Bewick*, ii. p. 235.—*Edw.* pl. 95.—*Lath. Syn.* iii. p. 432.—*Peale's Museum*, No. 2936.

MERGUS SERRATOR—LINNÆUS.‡

Mergus serrator, *Linn. Syst.* i. 208.—*Bonap. Synop.* p. 397.—L'Harle huppé, *Temm. Man.* ii. p. 884.—Red-breasted merganser, *Mont. Ornith. Dict.* ii. and *Supp. Flem. Brit. Anim.* p. 129.—*Selby, Illust. Br. Ornith.* pl. 58.

THIS is much more common in our fresh waters than either of the preceding, and is frequently brought to the Philadelphia

* The female, or a young male of this bird, has lately been killed in England, and is figured in the last part of Mr Selby's Illustrations. This, I believe, is the first instance of its occurrence in Europe.—Ed.

† HUTCHINS, as quoted by Latham.

‡ This beautiful species is also a native of both continents, and has similar manners with its congeners. In this country during winter they frequent the

market from the shores of the Delaware. It is an inhabitant of both continents. In the United States, it is generally migratory ; though a few are occasionally seen in autumn, but none of their nests have as yet come under my notice. They also frequent the sea shore, keeping within the bays and estuaries of rivers. They swim low in the water, and, when wounded in the wing, very dexterously contrive to elude the sportsman or his dog, by diving and coming up at a great distance, raising the bill only above water, and dipping down again with the greatest silence. The young males of a year old are often found in the plumage of the female ; their food consists of small fry, and various kinds of shell-fish.

The red-breasted merganser is said, by Pennant, to breed on Loch Mari, in the county of Ross, in North Britain, and also in the Isle of Islay. Latham informs us, that it inhabits most parts of the north of Europe on the continent, and as high as Iceland ; also in the Russian dominions about the great rivers of Siberia, and the Lake Baikal. Is said to be frequent in Greenland, where it breeds on the shores. The inhabitants often take it by darts thrown at it, especially in August, being then in moult. At Hudson's Bay, according to Hutchins, they come in pairs about the beginning of June, as soon as the ice breaks up, and build soon after their arrival, chiefly on dry spots of ground in the islands ; lay from eight to thirteen white

sea, but even in severe weather do not so frequently ascend the rivers. They breed throughout the whole of the north of Scotland, by the edges, or on the small islets of fresh water lakes, both sexes being seen in company only so long as the female continues to lay. The nest is placed in some thicket of brush-wood or rank herbage, and is composed of the same materials which Wilson has mentioned. The eggs are a rich yellowish fawn colour. Both Wilson and some of our British writers mention them as white, or bluish white. When they have been sat upon for some time and approach to maturity, they receive the latter tint from the transparency of the shell.

The female sits very close, and will allow an intruder to approach within the distance of a yard. All the nests which I have seen had two runs in opposite directions, leading out of the cover, and when disturbed, she followed one of these for a few yards before taking flight.—Ed.

eggs, the size of those of a duck ; the nest is made of withered grass, and lined with the down of the breast. The young are of a dirty brown, like young goslings. In October they all depart southward to the lakes, where they may have open water.

This species is twenty-two inches in length, and thirty-two in extent ; the bill is two inches and three quarters in length, of the colour of bright sealing wax, ridged above with dusky ; the nail at the tip, large, blackish, and overhanging ; both mandibles are thickly serrated ; irides, red ; head, furnished with a long hairy crest, which is often pendent, but occasionally erected, as represented in the plate ; this, and part of the neck is black, glossed with green ; the neck under this, for two or three inches, is pure white, ending in a broad space of reddish ochre spotted with black, which spreads over the lower part of the neck and sides of the breast ; shoulders, back, and tertials, deep velvety black, the first marked with a number of singular roundish spots of white ; scapulars, white ; wing-coverts, mostly white, crossed by two narrow bands of black ; primaries, black ; secondaries, white ; several of the latter edged with black ; lower part of the back, the rump, and tail-coverts, grey, speckled with black ; sides under the wings, elegantly crossed with numerous waving lines of black ; belly and vent, white ; legs and feet, red ; the tail, dusky ash ; the black of the back passes up the hind neck in a narrow band to the head.

The female is twenty-one inches in length, and thirty in extent ; the crested head and part of the neck are of a dull sorrel colour ; irides, yellow ; legs and bill red, upper parts, dusky slate ; wings, black ; greater coverts, largely tipped with white ; secondaries, nearly all white ; sides of the breast, slightly dusky ; whole lower parts, pure white ; the tail is of a lighter slate than the back. The crest is much shorter than in the male, and sometimes there is a slight tinge of ferruginous on the breast.

The windpipe of the male of this species is very curious, and differs something from that of the goosander. About two

inches from the mouth, it swells out to four times its common diameter, continuing of that size for about an inch and a half. This swelling is capable of being shortened or extended; it then continues of its first diameter for two inches or more, when it becomes flattish, and almost transparent for other two inches; it then swells into a bony labyrinth of more than two inches in length by one and a half in width, over the hollow sides of which is spread a yellowish skin like parchment. The left side of this, fronting the back of the bird, is a hard bone. The divarications come out very regularly from this at the lower end, and enter the lungs.

The intention of Nature in this extraordinary structure is probably to enable the bird to take down a supply of air to support respiration while diving; yet why should the female, who takes the same submarine excursions as the male, be entirely destitute of this apparatus?

SCAUP DUCK.—ANAS MARILLA.—PLATE LXIX. FIG. 3.

Le petit Morillon rayé, *Briss.* vi. p. 416, 26. A.—*Arct. Zool.* No. 498.—*Lath. Syn.* iii. p. 500.—*Peale's Museum*, No. 2668.

FULIGULA MARILLA.—STEPHENS.*

Fuligula marilla, *Stept. Cont. Sh. Zool.* xii. p. 108.—*Bonap. Syn.* p. 392.—*North. Zool.* ii. p. 457.—*Anas marilla*, *Linn.* i. p. 19.—*Scaup Duck*, *Mont. Ornith. Dict.* i. and *Supp.*—*Bew.* ii. p. 339.—*Canard milouinan*, *Temm. Man.* ii. p. 865.—*Nyroca marilla*, *Flem. Br. Anim.* p. 122.—*Common Scaup Pothard*, *Selby, Illust. Br. Ornith.* pl. 66.

THIS duck is better known among us by the name of the blue bill. It is an excellent diver, and, according to Willough-

* Common also to both continents, and in Britain a most abundant sea duck. Though generally to be found in the poultry markets during winter, it is strong and ill flavoured, or what is called *fishy*, and of little estimation for the table. In the Northern Zoology, the American specimens are said to be smaller, but no other distinctions could be perceived; a single northern specimen which I possess,

by, feeds on a certain small kind of shell-fish called scaup, whence it has derived its name. It is common both to our fresh water rivers and sea shores in winter. Those that frequent the latter are generally much the fattest, on account of the greater abundance of food along the coast. It is sometimes abundant in the Delaware, particularly in those places where small snails, its favourite shell-fish, abound, feeding also, like most of its tribe, by moonlight. They generally leave us in April, though I have met with individuals of this species so

agrees nearly with the dimensions given of the smaller kind, and I can see no other important difference; but there are also larger-sized birds, known to the natives by the addition of "*Keetchee*," to the name, and I think it probable that two birds may be here confused, which future observations will allow us to separate.

The young of both this bird and the tufted pochard, have a white band circling the base of the bill, which has caused them to be described as distinct species.

To the description of Wilson, Mr Ord has added the following observations: "In the Delaware there are several favourite feeding grounds of the blue bill along the Jersey shore, from Burlington to Mantua Creek; but the most noted spot appears to be the cove which extends from Timber Creek to Eagle Point, and known by the name of Ladd's Cove. Thither the blue bills repair in the autumn, never quit it until they depart in the spring for the purpose of breeding, except when driven away in the winter by the ice. It is no uncommon circumstance to see many hundreds of these birds at once, constantly diving for food; but so shy are they, that even with the aid of a very small and well-constructed skiff, cautiously paddled, it is difficult to approach them within gunshot. So very sagacious are they, that they appear to know the precise distance wherein they are safe; and, after the shooter has advanced within this point, they then begin to spread their lines in such a manner, that, in a flock of a hundred, not more than three or four can be selected in a group at any one view. They swim low in the water; are strong feathered; and are not easily killed. When slightly wounded, and unable to fly, it is almost hopeless to follow them, in consequence of their great skill in diving. Their wings being short, they either cannot rise with the wind, when it blows freshly, or they are unwilling to do so, for they are invariably seen to rise against the wind. In a calm they get up with considerable fluttering. Though often seen feeding in places where they can reach the bottom with their bills, yet they seldom venture on the shore, the labour of walking appearing repugnant to their inclinations. When wounded, they will never take to the land if they can possibly avoid it; and when compelled to walk, they waddle along in the awkward manner of those birds whose legs, placed far behind, do not admit of a free and graceful progression."—ED.

late as the middle of May, among the salt marshes of New Jersey. Their flesh is not of the most delicate kind, yet some persons esteem it. That of the young birds is generally the tenderest and most palatable.

The length of the blue bill is nineteen inches, extent twenty-nine inches; bill, broad, generally of a light blue, sometimes of a dusky lead colour; irides, reddish; head, tumid, covered with plumage of a dark glossy green, extending half way down the neck; rest of the neck and breast, black, spreading round to the back; back and scapulars, white, thickly crossed with waving lines of black; lesser coverts, dusky, powdered with veins of whitish; primaries and tertials, brownish black, secondaries, white, tipped with black, forming the speculum; rump and tail-coverts, black; tail, short, rounded, and of a dusky brown; belly, white, crossed near the vent with waving lines of ash; vent, black; legs and feet, dark slate.

Such is the colour of the bird in its perfect state. Young birds vary considerably, some having the head black, mixed with gray and purple, others the back dusky, with little or no white, and that irregularly dispersed.

The female has the front and sides of the same white; head and half of the neck, blackish brown; breast, spreading round to the back, a dark sooty brown, broadly skirted with whitish; back, black, thinly sprinkled with grains of white; vent, whitish; wings the same as in the male.

The windpipe of the male of this species is of large diameter; the labyrinth similar to some others, though not of the largest kind; it has something of the shape of a single cockle shell; its open side, or circular rim, covered with a thin transparent skin. Just before the windpipe enters this, it lessens its diameter, at least two-thirds, and assumes a flattish form.

The scaup duck is well known in England. It inhabits Iceland and the more northern parts of the continent of Europe, Lapland, Sweden, Norway, and Russia. It is also common on the northern shores of Siberia. It is very frequent on the river Ob. Breeds in the north, and migrates southward in

winter. It inhabits America as high as Hudson's Bay, and retires from this place in October.*

AMERICAN WIDGEON.—ANAS AMERICANA.—PLATE LXIX.

FIG. 4.

Le Canard Jenson, *Pl. Enl.* 955.—*Buff.* ix. p. 174.—*Arct. Zool.* No. 502.—*Lath.* iii. p. 520.—*Peale's Museum*, No. 2798.

MARECA AMERICANA.—STEPHENS.†

Mareca Americana, *Steph. Cont. Sh. Zool.* xii. p. 135.—*North. Zool.* ii. p. 445.—*Anas Americana*, *Bonap. Synop.* p. 384.

THIS is a handsomely marked and sprightly species, very common in winter along our whole coast, from Florida to

* LATHAM.

† This species is closely allied to the European widgeon, and may be taken as the American analogue. They seem to meet each other about the Arctic circle; that of America extending beyond it, and that of Europe reaching to the European verge. They will form the types of Stephens's genus, *Mareca*, which will probably stand in the rank of a more subordinate group only. The form is one of considerable interest, possessing many combinations, which may be found to connect some parts of the natural system. The bird of Europe, except in the breeding season, is mostly an inhabitant of the sea-shore; during a severe winter, a few stray inland to the larger lakes and rivers, but as soon as a recurrence of moderate weather takes place, they return to their more favourite feeding grounds. In Britain they are mostly migratory, and at the first commencement of our harder weather, are found in vast flocks on the flatter coasts, particularly where there are beds of mussels, and other shell-fish. During day, they rest and plume themselves on the higher shelves, or doze buoyant on the waves, and only commence their activity with the approach of twilight. At this time they become clamorous, and rising in dense flocks from their day's resort proceed to the feeding grounds, generally according to the wind in the same tract. At the commencement of winter, they are fat and delicate, much sought after by the sea sportsmen, and are killed in numbers by persons lying in watch in the track of the known flight, or what, in some parts, is called *slaking*. The most propitious night for this sport is about half moon, and strong wind; the birds then fly low, and their approach is easily known by the whistling of their wings, and

Rhode Island, but most abundant in Carolina, where it frequents the rice plantations. In Martinico, great flocks take short flights from one rice field to another, during the rainy season, and are much complained of by the planters. The widgeon is the constant attendant of the celebrated canvass-back duck, so abundant in various parts of the Chesapeake Bay, by the aid of whose labour he has ingenuity enough to contrive to make a good subsistence. The widgeon is extremely fond of the tender roots of that particular species of aquatic plant on which the canvass-back feeds, and for which that duck is in the constant habit of diving. The widgeon, who never dives, watches the moment of the canvass-back's rising, and, before he has his eyes well opened, snatches the delicious morsel from his mouth and makes off. On this account the canvass-backs and widgeons, or, as they are called round the bay, bald-pates, live in a state of perpetual contention; the only chance the latter have is to retreat, and make their approaches at convenient opportunities. They are said to be in great plenty at St Domingo and Cayenne, where they are called vingeon, or gingeon. Are said sometimes to perch on trees; feed in company, and have a sentinel on the watch, like some other birds. They feed little during the day, but in the evenings come out from their hiding-places, and are then easily traced by their particular whistle, or *whew-whew*. This soft note, or whistle, is frequently imitated with success, to entice them within gunshot. They are not known to breed in any part of the United States; are common, in the winter months, along the bays of Egg Harbour and Cape May, and also those of the Delaware. They leave these places in April, and appear upon the coasts of Hudson's Bay in May, as soon as the thaws come on, chiefly in pairs; lay there only from six

their own shrill cry; whence their coast name of *hew*. They are subject to an annual change of plumage. Mr Ord mentions, that a few of these birds breed annually in the marshes in the neighbourhood of Duck Creek, in the State of Delaware. An acquaintance of the Editor's brought him thence, in the month of June, an egg, which had been taken from a nest situated in a cluster of alders.—
ED.

to eight eggs, and feed on flies and worms in the swamps; depart in flocks in autumn.*

These birds are frequently brought to the market of Baltimore, and generally bring a good price, their flesh being excellent. They are of a lively frolicsome disposition, and, with proper attention, might easily be domesticated.

The widgeon, or bald-pate, measures twenty-two inches in length, and thirty inches in extent; the bill is of a slate-colour; the nail black; the front and crown, cream-coloured, sometimes nearly white, the feathers inflated; from the eye, backwards to the middle of the neck behind, extends a band of deep glossy green, gold, and purple; throat, chin, and sides of the neck before, as far as the green extends, dull yellowish white, thickly speckled with black; breast, and hind part of the neck, hoary bay, running in under the wings, where it is crossed with fine waving lines of black; whole belly, white; vent, black; back and scapulars, black, thickly and beautifully crossed with undulating lines of vinous bay; lower part of the back, more dusky; tail-coverts, long, pointed, whitish, crossed as the back; tail, pointed, brownish ash; the two middle feathers an inch longer than the rest, and tapering; shoulder of the wing, brownish ash; wing-coverts, immediately below, white, forming a large spot; primaries, brownish ash; middle secondaries, black, glossed with green, forming the speculum; tertials, black, edged with white, between which, and the beauty-spot, several of the secondaries are white.

The female has the whole head and neck yellowish white, thickly speckled with black, very little rufous on the breast; the back is dark brown. The young males, as usual, very much like the females during the first season, and do not receive their full plumage until the second year. They are also subject to a regular change every spring and autumn.

* HUTCHINS.

YOUNG OF THE SNOW GOOSE.—ANAS HYPERBOREA.

PLATE LXIX. FIG. 5.

Bean Goose, *Lath. Syn.* iii. p. 464.—White-fronted Goose, *Ibid.* iii. p. 463; *Arct. Zool.* No. 476.—Blue-winged Goose, *Lath. Syn.* iii. p. 469.—*Peale's Museum*, No. 2636.

ANSER HYPERBOREAS.—BONAPARTE.

THE full-plumaged perfect male bird of this species, has already been figured in the preceding plate, and I now hazard a conjecture, founded on the best examination I could make of the young bird here figured, comparing it with the descriptions of the different accounts above referred to, that the whole of them have been taken from the various individuals of the present, in a greater or lesser degree of approach to its true and perfect colours.

These birds pass along our coasts, and settle in our rivers, every autumn; among thirty or forty, there are seldom more than six or eight pure white, or old birds. The rest vary so much, that no two are exactly alike; yet all bear the most evident marks, in the particular structure of their bills, &c., of being the same identical species. A gradual change so great, as from a bird of this colour to one of pure white, must necessarily produce a number of varieties, or differences in the appearance of the plumage; but the form of the bill and legs remains the same, and any peculiarity in either is the surest mean we have to detect a species under all its various appearances. It is therefore to be regretted, that the authors above referred to in the synonymes, have paid so little attention to the singular conformation of the bill; for even in the description of the snow goose, neither that nor the internal peculiarities are at all mentioned.

The length of the bird, represented in our plate, was twenty-eight inches; extent, four feet eight inches; bill, gibbous at

the sides both above and below, exposing the teeth of the upper and lower mandibles, and furnished with a nail at the tip on both; the whole being of a light-reddish purple, or pale lake, except the gibbosity, which is black, and the two nails, which are of a pale light-blue; nostril, pervious, an oblong slit, placed nearly in the middle of the upper mandible; irides, dark brown; whole head, and half of the neck, white; rest of the neck and breast, as well as upper part of the back, of a purplish brown, darkest where it joins the white; all the feathers being finely tipped with pale brown; whole wing-coverts, very pale ash, or light lead-colour; primaries and secondaries, black; tertials, long, tapering, centred with black, edged with light-blue, and usually fall over the wing; scapulars, cinereous brown; lower parts of the back and rump, of the same light ash as the wing-coverts; tail, rounded, blackish, consisting of sixteen feathers, edged and tipped broadly with white; tail-coverts, white; belly and vent, whitish, intermixed with cinereous; feet and legs, of the same lake colour as the bill.

This specimen was a female; the tongue was thick and fleshy, armed on each side with thirteen strong bony teeth, exactly similar in appearance, as well as in number, to those on the tongue of the snow goose; the inner concavity of the upper mandible was also studded with rows of teeth. The stomach was extremely muscular, filled with some vegetable matter, and clear gravel.

With this, another was shot, differing considerably in its markings, having little or no white on the head, and being smaller; its general colour, dark brown, intermixed with pale ash, and darker below, but evidently of the same species with the other.

PIED DUCK.—*ANAS LABRADORA*.—PLATE LXIX. FIG. 6.

Arct. Zool. No. 488.—*Lath. Syn.* iii. p. 497.—*Peale's Museum*, No. 2858.

FULIGULA LABRADORA.—BONAPARTE.*

Fuligula Labradoræ, *Bonap. Synop.* p. 391.

THIS is rather a scarce species on our coasts, and is never met with on fresh water lakes or rivers. It is called by some gunners the sand shoal duck, from its habit of frequenting sand bars. Its principal food appears to be shell-fish, which it procures by diving. The flesh is dry, and partakes considerably of the nature of its food. It is only seen here during winter; most commonly early in the month of March, a few are observed in our market. Of their principal manners, place, or mode of breeding, nothing more is known. Latham observes, that a pair in the possession of Sir Joseph Banks were brought from Labrador. Having myself had frequent opportunities of examining both sexes of these birds, I find that, like most others, they are subject, when young, to a progressive change of colour. The full-plumaged male is as follows: Length, twenty inches; extent, twenty-nine inches; the base of the bill, and edges of both mandibles for two-thirds of their length, are of a pale orange colour; the rest, black; towards the extremity it widens a little in the manner of the shovellers, the sides there having the singularity of being only a soft, loose, pendulous skin; irides, dark hazel; head, and half of the neck, white, marked along the crown to the hind head with a stripe of black; the plumage of the cheeks is of a peculiar bristly nature at the points, and round the neck passes a collar of black which spreads over the back, rump, and tail-coverts;

* The Prince of Musignano places this bird among the *Fuligulae*. I have had no opportunity of seeing the bird itself, and cannot therefore speak from examination as to its station. It seems a true sea-duck, and agrees in general habits with the scaups and pochards.—En.

below this collar the upper part of the breast is white, extending itself over the whole scapulars, wing-coverts, and secondaries; the primaries, lower part of the breast, whole belly, and vent, are black; tail, pointed, and of a blackish hoary colour; the fore part of the legs and ridges of the toes, pale whitish ash; hind part, the same, bespattered with blackish; webs, black; the edges of both mandibles are largely pectinated. In young birds, the whole of the white plumage is generally strongly tinged with a yellowish cream colour; in old males, these parts are pure white, with the exception sometimes of the bristly pointed plumage of the cheeks, which retains its cream tint the longest, and, with the skinny part of the bill, form two strong peculiarities of this species.

The female measures nineteen inches in length, and twenty-seven in extent; bill, exactly as in the male; sides of the front, white; head, chin, and neck, ashy grey; upper parts of the back and wings, brownish slate; secondaries only, white; tertials, hoary; the white secondaries form a spot on the wing, bounded by the black primaries, and four hoary tertials edged with black; whole lower parts, a dull ash, skirted with brownish white, or clay colour; legs and feet, as in the male; the bill in both is marked from the nostrils backwards by a singular heart-shaped outline.

The windpipe of the male measures ten inches in length, and has four enlargements, viz. one immediately below the mouth, and another at the interval of an inch; it then bends largely down to the breast bone, to which it adheres by two strong muscles, and has at that place a third expansion. It then becomes flattened, and, before it separates into the lungs, has a fourth enlargement much greater than any of the former, which is bony, and round, puffing out from the left side. The intestines measured six feet; the stomach contained small clams, and some glutinous matter; the liver was remarkably large.

LONG-TAILED DUCK.—ANAS GLACIALIS.—PLATE LXX. FIG. 1.

MALE.

Le Canard à longue queue de Terre Neuve, *Briss.* vi. p. 382, 18.—*Buff.* ix. p. 202.
—*Pl. Enl.* 1008.—*Edw.* pl. 280.—*Arct. Zool.* No. 501.—*Lath. Syn.* iii. p.
528.—*Peale's Museum*, No. 2810.

HARELDA GLACIALIS.—LEACH,*

Anas glacialis, and *Anas hyemalis*, *Linn. Syst.* i. p. 202, and 203.—*Lath. Ind.*
ii. p. 864.—*Fuligula glacialis*, *Bonap. Synop.* p. 395.—Long-tailed duck, *Mont.*
Ornith. Dict. i. and *Supp.*—*Bew. Br. Birds*, ii. 363.—Long-tailed Hareld,
Selby's Illust. Br. Ornith. pl. 61. m. and f.—*Harelda glacialis*, *North. Zool.* ii.
p. 460.

THIS duck is very generally known along the shores of the Chesapeake Bay by the name of South-Southerly, from the singularity of its cry, something imitative of the sound of those words, and also, that, when very clamorous, they are supposed to betoken a southerly wind; on the coast of New Jersey, they are usually called old wives. They are chiefly salt water

* This bird forms the type of Dr Leach's genus *Harelda*. It is remarkable for the decided change between the plumage of the breeding season and that of the winter, bearing analogy, in many particulars, to the Tringæ and their allies—for the prolongation of the scapulary feathers, and for the narrow lengthened tail. It is a native of both continents, but in Britain is only met with during winter, in the dress of that season, or in the plumage of the first year. It keeps to the open sea, and seldom ventures inland to rivers or lakes. The following is a description of a specimen killed on the first May, from the *Northern Zoology*, and which agrees nearly with skins in my possession. "The whole upper plumage, the central pairs of tail feathers, and the under plumage to the fore part of the belly, brownish black; the lesser quills, paler. A triangular patch of feathers, between the shoulders and the scapulars, broadly bordered with orange brown." (In the winter plumage, the long scapulars are pure white, and form a beautiful contrast, hanging over the dark quills.) "Sides of head from the bill to the ears, ash grey; eye stripe, and posterior under plumage, pure white; flanks, sides of the rump, and lateral tail feathers, white, stained with brown; axillaries and inner wing-coverts, clove brown; bill, black, with an orange belt (*bright vermilion*) before the nostrils."—ED.

ducks, and seldom ramble far from the sea. They inhabit our bays and coasts during the winter only; are rarely found in the marshes, but keep in the channel, diving for small shellfish, which are their principal food. In passing to and from the bays, sometimes in vast flocks, particularly towards evening, their loud and confused noise may be heard in calm weather at the distance of several miles. They fly very swiftly, take short excursions, and are lively restless birds. Their native regions are in the north, where great numbers of them remain during the whole year; part only of the vast family migrating south to avoid the severest rigours of that climate. They are common to the whole northern hemisphere. In the Orkneys, they are met with in considerable flocks, from October to April; frequent in Sweden, Lapland, and Russia; are often found about St Petersburg, and also in Kamtschatka. Are said to breed at Hudson's Bay, making their nest among the grass near the sea, like the eider duck, and about the middle of June lay from ten to fourteen bluish white eggs, the size of those of a pullet. When the young are hatched, the mother carries them to the water in her bill. The nest is lined with the down of her breast, which is accounted equally valuable with that of the eider duck, were it to be had in the same quantity.* They are hardy birds, and excellent divers. Are not very common in England, coming there only in very severe winters; and then but in small straggling parties; yet are found on the coast of America, as far south at least as Charleston, in Carolina, during the winter. Their flesh is held in no great estimation, having a fishy taste. The down and plumage, particularly on the breast and lower parts of the body, are very abundant, and appear to be of the best quality.

The length of this species is twenty-two inches; extent, thirty inches; bill, black, crossed near the extremity by a band of orange; tongue, downy; iris, dark red; cheeks and frontlet, dull dusky drab, passing over the eye, and joining a large

* LATHAM.

patch of black on the side of the neck, which ends in dark brown ; throat and rest of the neck, white ; crown, tufted, and of a pale cream colour ; lower part of the neck, breast, back, and wings, black ; scapulars and tertials, pale bluish white, long, and pointed, and falling gracefully over the wings ; the white of the lower part of the neck spreads over the back an inch or two ; the white of the belly spreads over the sides, and nearly meets at the rump ; secondaries, chestnut, forming a bar across the wing ; primaries, rump, and tail-coverts, black ; the tail consists of fourteen feathers, all remarkably pointed, the two middle ones nearly four inches longer than the others ; these, with the two adjoining ones, are black ; the rest, white ; legs and feet, dusky slate.

On dissection, the intestines were found to measure five feet six inches. The windpipe was very curiously formed ; besides the labyrinth, which is nearly as large as the end of the thumb, it has an expansion immediately above that, of double its usual diameter, which continues for an inch and a half ; this is flattened on the side next the breast, with an oblong window-like vacancy in it, crossed with five narrow bars, and covered with a thin transparent skin, like the panes of a window ; another thin skin of the same kind is spread over the external side of the labyrinth, which is partly of a circular form. This singular conformation is, as usual, peculiar to the male, the female having the windpipe of nearly an uniform thickness throughout. She differs also so much in the colours and markings of her plumage, as to render a figure of her in the same plate necessary ; for a description of which see the following article.

FEMALE LONG-TAILED DUCK.—PLATE LXX. FIG. 2.

Anas hyemalis, *Linn. Syst.* 202, 29.—*Lath. Syn.* iii. p. 529.—*Peale's Museum*, No. 2811.

HARELDA GLACIALIS.—LEACH.

THE female is distinguished from the male by wanting the lengthened tertials, and the two long pointed feathers of the tail, and also by her size, and the rest of her plumage, which is as follows; length, sixteen inches; extent, twenty-eight inches; bill, dusky; middle of the crown, and spot on the side of the neck, blackish; a narrow dusky line runs along the throat for two inches; rest of the head, and upper half of the neck, white, lower half, pale vinaceous bay, blended with white; all the rest of the lower parts of the body, pure white; back, scapulars, and lesser wing-coverts, bright ferruginous, centred with black, and interspersed with whitish; shoulders of the wing, and quills, black; lower part of the back, the same, tinged with brown; tail, pale brown ash, inner vanes of all but the two middle feathers, white; legs and feet, dusky slate. The legs are placed far behind, which circumstance points out the species to be great divers. In some females, the upper parts are less ferruginous.

Some writers suppose the singular voice, or call, of this species, to be occasioned by the remarkable construction of its windpipe; but the fact, that the females are uniformly the most noisy, and yet are entirely destitute of the singularities of this conformation, overthrows the probability of this supposition.

SUMMER DUCK, OR WOOD DUCK.—ANAS SPONSA.

PLATE LXX. FIG. 3.

Le Canard d'Été, *Briss.* vi. p. 351. 11. pl. 32. fig. 2.—Le beau Canard huppé, *Buff.* ix. p. 245.—*Pl. Enl.* 980, 981.—Summer duck, *Catesby*, i. pl. 97.—*Edw.* pl. 101.—*Aret. Zool.* No. 943.—*Lath. Syn.* iii. p. 546.—*Peale's Museum*, No. 2872.

DENDRONESSA SPONSA.—RICHARDSON, SWAINSON.*

Anas sponsa, *Bonap. Synop.* p. 385.—*Dendronessa sponsa*, *North. Zool.* ii. 446.

THIS most beautiful of all our ducks has probably no superior among its whole tribe for richness and variety of colours. It is called the wood duck, from the circumstance of its breeding in hollow trees; and the summer duck, from remaining with us chiefly during the summer. It is familiarly known in every quarter of the United States, from Florida to Lake Ontario, in the neighbourhood of which latter place I have my-

* These lovely ducks may be said to represent an incessorial form among the *anatidæ*; they build and perch on trees, and spend as much time on land as upon the waters; Dr Richardson has given this group, containing few members, the title of *dendronessa* from their arboreal habits. Our present species is the only one belonging to America, where it ranges rather to the south than north; the others, I believe, are all confined to India. They are remarkable for the beauty and splendour of their plumage, its glossy, silky, texture, and for the singular form of the scapulars, which, instead of an extreme developement in length, receive it in the contrary proportion of breadth; and instead of lying flat, in some stand perpendicular to the back. They are all adorned with an ample crest, pendulous, and running down the back of the neck. They are easily domesticated, but I do not know that they have been yet of much utility in this state, being more kept on account of their beauty, and few have been introduced except to our menageries; with a little trouble at first, they might form a much more common ornament about our artificial pieces of water. It is the only form of a *tree duck* common to this continent; in other countries there are, however, two or three others of very great importance in the natural system, whose structure and habits have yet been almost entirely overlooked or lost sight of. These seem to range principally over India, and more sparingly in Africa; and the summer duck is the solitary instance, the United States the nearly extreme limit, of its own peculiarities in this division of the world.—ED.

self met with it in October. It rarely visits the sea-shore, or salt marshes, its favourite haunts being the solitary, deep, and muddy creeks, ponds, and mill-dams of the interior, making its nest frequently in old hollow trees that overhang the water.

The summer duck is equally well known in Mexico and many of the West India Islands. During the whole of our winters, they are occasionally seen in the States south of the Potowmac. On the 10th of January, I met with two on a creek near Petersburg, in Virginia. In the more northern districts, however, they are migratory. In Pennsylvania, the female usually begins to lay late in April or early in May. Instances have been known where the nest was constructed of a few sticks laid in a fork of the branches; usually, however, the inside of a hollow tree is selected for this purpose. On the 18th of May I visited a tree containing the nest of a summer duck, on the banks of Tuckahoe river, New Jersey. It was an old grotesque white oak, whose top had been torn off by a storm. It stood on the declivity of the bank, about twenty yards from the water. In this hollow and broken top, and about six feet down, on the soft decayed wood, lay thirteen eggs, snugly covered with down, doubtless taken from the breast of the bird. These eggs were of an exact oval shape, less than those of a hen, the surface exceedingly fine grained, and of the highest polish, and slightly yellowish, greatly resembling old polished ivory. The egg measured two inches and an eighth by one inch and a half. On breaking one of them, the young bird was found to be nearly hatched, but dead, as neither of the parents had been observed about the tree during the three or four days preceding, and were conjectured to have been shot.

This tree had been occupied, probably by the same pair, for four successive years, in breeding time; the person who gave me the information, and whose house was within twenty or thirty yards of the tree, said that he had seen the female, the spring preceding, carry down thirteen young, one by one, in less than ten minutes. She caught them in her bill by the

wing or back of the neck, and landed them safely at the foot of the tree, whence she afterwards led them to the water. Under this same tree, at the time I visited it, a large sloop lay on the stocks, nearly finished; the deck was not more than twelve feet distant from the nest, yet notwithstanding the presence and noise of the workmen, the ducks would not abandon their old breeding place, but continued to pass out and in, as if no person had been near. The male usually perched on an adjoining limb, and kept watch while the female was laying, and also often while she was sitting. A tame goose had chosen a hollow space at the root of the same tree, to lay and hatch her young in.

The summer duck seldom flies in flocks of more than three or four individuals together, and most commonly in pairs, or singly. The common note of the drake is *peet, peet*; but when, standing sentinel, he sees danger, he makes a noise not unlike the crowing of a young cock, *oe eek ! oe eek !* Their food consists principally of acorns, seeds of the wild oats, and insects. Their flesh is inferior to that of the blue-winged teal. They are frequent in the markets of Philadelphia.

Among other gaudy feathers with which the Indians ornament the calumet or pipe of peace, the skin of the head and neck of the summer duck is frequently seen covering the stem.

This beautiful bird has often been tamed, and soon becomes so familiar as to permit one to stroke its back with the hand. I have seen individuals so tamed, in various parts of the Union. Captain Boyer, collector of the port of Havre-de-Grace, informs me, that, about forty years ago, a Mr Nathan Nicols, who lived on the west side of Gunpowder Creek, had a whole yard swarming with summer ducks, which he had tamed and completely domesticated, so that they bred and were as familiar as any other tame fowls; that he (Captain Boyer) himself saw them in that state, but does not know what became of them. Latham says, that they are often kept in European menageries, and will breed there.*

* *General Synopsis*, iii. 547.

The wood duck is nineteen inches in length, and two feet four inches in extent; bill, red, margined with black; a spot of black lies between the nostrils, reaching nearly to the tip, which is also of the same colour, and furnished with a large hooked nail; irides, orange red; front, crown, and pendent crest, rich glossy bronze green, ending in violet, elegantly marked with a line of pure white running from the upper mandible over the eye, and with another band of white proceeding from behind the eye, both mingling their long pendent plumes with the green and violet ones, producing a rich effect; cheeks and sides of the upper neck, violet; chin, throat, and collar round the neck, pure white, curving up in the form of a crescent, nearly to the posterior part of the eye; the white collar is bounded below with black; breast, dark violet brown, marked on the fore part with minute triangular spots of white, increasing in size until they spread into the white of the belly; each side of the breast is bounded by a large crescent of white, and that again by a broader one of deep black; sides, under the wings, thickly and beautifully marked with fine undulating parallel lines of black, on a ground of yellowish drab; the flanks are ornamented with broad alternate semicircular bands of black and white; sides of the vent, rich light violet; tail-coverts, long, of a hair-like texture at the sides, over which they descend, and of a deep black, glossed with green; back, dusky bronze, reflecting green; scapulars, black; tail, tapering, dark glossy green above; below, dusky; primaries, dusky, silvery hoary without, tipped with violet blue; secondaries, greenish blue, tipped with white; wing-coverts, violet blue, tipped with black; vent, dusky; legs and feet, yellowish red; claws, strong and hooked.

The above is as accurate a description as I can give of a very perfect specimen now before me, from which the figure in the plate was faithfully copied.

The female has the head slightly crested; crown, dark purple; behind the eye, a bar of white; chin and throat, for two inches, also white; head and neck, dark drab; breast, dusky brown, marked with large triangular spots of white;

back, dark glossy bronze brown, with some gold and greenish reflections. Speculum of the wings nearly the same as in the male, but the fine penciling of the sides, and the long hair-like tail-coverts, are wanting; the tail is also shorter.

GREEN-WINGED TEAL.—ANAS CRECCA.

PLATE LXX. FIG. 4.

Lath. Syn. iii. p. 554.—*Bewick's Br. Birds*, v. ii. p. 338.—*Peale's Museum*, No. 2832.

BOSCHAS CAROLINENSIS.—JARDINE.*

Anas Carolinensis, *Lath. Ind. Ornith.* ii. p. 874.—*Anas migratoria*, least green-winged teal, *Bart. Trav.* p. 293.—*Anas crecca*, varietas, *Forst. Phil. Trans.* lxii. p. 347.—*American teal*, *Lath. Gen. Hist.* x. p. 371.—*Anas crecca*, *Bonap. Synop.* p. 386.—*Anas (boschas) crecca*, var. *North. Zool.* ii. p. 443.

THE naturalists of Europe have designated this little duck by the name of the American teal, as being a species different from their own. On an examination, however, of the figure and description of the European teal by the ingenious and accurate Bewick, and comparing them with the present, no difference whatever appears in the length, extent, colour, or markings of either, but what commonly occurs among individuals of any other tribe; both undoubtedly belong to one and the same species.

* Most writers on the ornithology of America, have considered this bird as a variety of the European teal. All, however, agree in their regarding the difference in the variety, and of its being constant in the northern specimens. Thus, Dr Latham mentions the white pectoral band. Forster says, "this is a variety of the teal, for it wants the two white streaks above and below the eyes; the lower one indeed is faintly expressed in the male, which has also a lunated bar of white over each shoulder; this is not to be found in the European teal." Pennant, "that it wants the white line which the European one has above each eye, having only one below; has over each shoulder a lunated bar."—The authors of the *Northern Zoology* observe, "the only permanent difference that we have been able to detect, after comparing a number of specimens, is, that the English teal has a white longitudinal band on the scapulars, which the

This, like the preceding, is a fresh water duck, common in our markets in autumn and winter, but rarely seen here in summer. It frequents ponds, marshes, and the reedy shores of creeks and rivers; is very abundant among the rice plantations of the southern states; flies in small parties, and feeds at night; associates often with the duck and mallard, feeding on the seeds of various kinds of grasses and water plants, and also on the tender leaves of vegetables. Its flesh is accounted excellent.

The green-winged teal is fifteen inches in length, and twenty-four inches in extent; bill, black; irides, pale brown; lower eyelid, whitish; head, glossy reddish chestnut; from the eye backwards to the nape, runs a broad band of rich silky green, edged above and below by a fine line of brownish white; the plumage of the nape ends in a kind of pendent crest; chin, blackish; below the chestnut, the neck, for three quarters of an inch, is white, beautifully crossed with circular undulating lines of black; back, scapulars, and sides of the breast, white, thickly crossed in the same manner; breast, elegantly marked with roundish or heart-shaped spots of black, on a pale vinaceous ground, variegated with lighter tints; belly, white; sides waved with undulating lines; lower part of the vent-feathers, black; sides of the same, brownish white or pale reddish cream; lesser wing-coverts, brown ash, greater,

other wants. All the specimens brought home by the Expedition, have a broad transverse bar on the shoulder, which does not exist in the English one." And our author, in his plate, has most distinctly marked the differences. From the testimony of all its describers marking the variety as permanent and similar, I am certainly inclined to consider this bird, though nearly allied, to be distinct; and, as far as we yet know, peculiar to the northern parts of America. I have not been able to procure a specimen for immediate comparison, and only once had an opportunity of slightly examining a northern bird: in it the distinctions were at once perceptible. From their great similarity, no observers have yet particularly attended to the manners of the American bird, or to the marking of the females. If the above observations are the means of directing farther attention to these points, they will have performed their intended end. I by no means consider the point decided.—Ed.

tip with reddish cream ; the first five secondaries deep velvety black, the next five resplendent green, forming the speculum or beauty spot, which is bounded above by pale buff, below by white, and on each side by deep black ; primaries, ashy brown ; tail, pointed, eighteen feathers, dark drab ; legs and feet, flesh-coloured. In some a few circular touches of white appear on the breast near the shoulder of the wing. The windpipe has a small bony labyrinth where it separates into the lungs ; the intestines measure three feet six inches, and are very small and tender.

The female wants the chestnut bay on the head, and the band of rich green through the eye, these parts being dusky white speckled with black ; the breast is grey brown, thickly sprinkled with blackish, or dark brown ; the back dark brown, waved with broad lines of brownish white ; wing nearly the same as in the male.

This species is said to breed at Hudson's Bay, and to have from five to seven young at a time.* In France it remains throughout the year, and builds in April, among the rushes on the edges of the ponds. It has been lately discovered to breed also in England, in the mosses about Carlisle.† It is not known to breed in any part of the United States. The teal is found in the north of Europe as far as Iceland, and also inhabits the Caspian Sea to the south. Extends likewise to China, having been recognised by Latham among some fine drawings of the birds of that country.

* LATHAM.

† BEWICK.

CANVASS-BACK DUCK.—ANAS VALISNERIA.

PLATE LXX. FIG. 5.

Peale's Museum, No. 2816.

FULIGULA VALISNERIANA.—STEPHENS.*

Fuligula valisneriana, *Bonap. Synop.* p. 392.—*North. Zool.* iv. p. 450.—*Anas valisneriana*, *Wilson*.

THIS celebrated American species, as far as can be judged from the best figures and descriptions of foreign birds, is altogether unknown in Europe. It approaches nearest to the pochard of England, (*Anas ferina*,) but differs from that bird in being superior in size and weight, in the greater magnitude of its bill, and the general whiteness of its plumage. A short comparison of the two will elucidate this point: The canvass-back measures two feet in length, by three feet in extent, and when in the best order weighs three pounds and upwards. The

* This species is now well established, and can never be mistaken. I am not aware that any thing can be added to Wilson's accurate description, and the additional remarks of Mr Ord, which we have printed, unless Wilson's own description, in poetry, of his first capture of the *canvass-back*.—ED.

“ Slow round an opening point we softly steal,
Where four large ducks in playful circles wheel,
The far-famed *canvass-backs* at once we know,
Their broad flat bodies wrapt in pencill'd snow;
The burnish'd chestnut o'er their necks that shone,
Spread deepening round each breast a sable zone;
Wary they gaze——our boat in silence glides,
The slow-moved paddles steal along the sides;
Quick flashing thunders roar along the flood,
And three lie prostrate, vomiting their blood!
The fourth aloft on whistling pinions soar'd,
One fatal glance the fiery thunders pour'd,
Prone drops the bird amid the dashing waves,
And the clear stream his glossy plumage laves.”

Foresters, p. 39.

pochard, according to Latham and Bewick, measures nineteen inches in length, and thirty in extent, and weighs one pound twelve or thirteen ounces. The latter writer says of the pochard, "the plumage, above and below, is wholly covered with prettily freckled slender dusky threads, disposed transversely in close set, zigzag lines, on a pale ground, more or less shaded off with ash;" a description much more applicable to the bird figured beside it, the red head, and which very probably is the species meant. In the figure of the pochard given by Mr Bewick, who is generally correct, the bill agrees very well with that of our red head; but is scarcely half the size and thickness of that of the canvass-back; and the figure in the *Planches Enluminées* corresponds in that respect with Bewick's. In short, either these writers are egregiously erroneous in their figures and descriptions, or the present duck was altogether unknown to them. Considering the latter supposition the more probable of the two, I have designated this as a new species, and shall proceed to detail some particulars of its history.

The canvass-back duck arrives in the United States from the north about the middle of October, a few descend to the Hudson and Delaware, but the great body of these birds resort to the numerous rivers belonging to and in the neighbourhood of the Chesapeake Bay, particularly the Susquehannah, the Patapsco, Potowmac, and James' rivers, which appear to be their general winter rendezvous. Beyond this, to the south, I can find no certain accounts of them. At the Susquehannah, they are called canvass-backs; on the Potowmac, white-backs; and on James' river, sheldrakes. They are seldom found at a great distance up any of these rivers, or even in the salt water bay; but in that particular part of tide water where a certain grass-like plant grows, on the roots of which they feed. This plant, which is said to be a species of *Valisineria*, grows on fresh water shoals of from seven to nine feet (but never where these are occasionally dry), in long narrow grass-like blades of four or five feet in length; the root is white, and has some resemblance to small celery. This grass is in many places so thick,

that a boat can with difficulty be rowed through it, it so impedes the oars. The shores are lined with large quantities of it, torn up by the ducks, and drifted up by the winds, lying like hay in wind rows. Wherever this plant grows in abundance, the canvass-backs may be expected, either to pay occasional visits, or to make it their regular residence during the winter. It occurs in some parts of the Hudson; in the Delaware, near Gloucester, a few miles below Philadelphia; and in most of the rivers that fall into the Chesapeake, to each of which particular places these ducks resort; while in waters unprovided with this nutritive plant they are altogether unknown.

On the first arrival of these birds in the Susquehannah, near Havre-de-Grace, they are generally lean; but such is the abundance of their favourite food, that, towards the beginning of November, they are in pretty good order. They are excellent divers, and swim with great speed and agility. They sometimes assemble in such multitudes as to cover several acres of the river, and, when they rise suddenly, produce a noise resembling thunder. They float about these shoals, diving and tearing up the grass by the roots, which is the only part they eat. They are extremely shy, and can rarely be approached; unless by stratagem. When wounded in the wing, they dive to such prodigious distances, and with such rapidity, continuing it so perseveringly, and with such cunning and active vigour, as almost always to render the pursuit hopeless. From the great demand for these ducks, and the high price they uniformly bring in market, various modes are practised to get within gunshot of them. The most successful way is said to be, decoying them to the shore by means of a dog, while the gunner lies closely concealed in a proper situation. The dog, if properly trained, plays backwards and forwards along the margin of the water, and the ducks, observing his manœuvres, enticed perhaps by curiosity, gradually approach the shore, until they are sometimes within twenty or thirty yards of the spot where the gunner lies concealed, and from which he rakes them, first on the water, and then as they rise. This method

is called *tolling them in*. If the ducks seem difficult to decoy, any glaring object, such as a red handkerchief, is fixed round the dog's middle, or to his tail, and this rarely fails to attract them. Sometimes, by moonlight, the sportsman directs his skiff towards a flock whose position he had previously ascertained, keeping within the projecting shadow of some wood, bank, or headland, and paddles along so silently and imperceptibly, as often to approach within fifteen or twenty yards of a flock of many thousands, among whom he generally makes great slaughter.

Many other stratagems are practised, and, indeed, every plan that the ingenuity of the experienced sportsman can suggest, to approach within gunshot of these birds; but of all the modes pursued, none intimidate them so much as shooting them by night; and they soon abandon the place where they have been thus repeatedly shot at. During the day, they are dispersed about; but towards evening, collect in large flocks, and come into the mouths of creeks, where they often ride, as at anchor, with their head under their wing, asleep, there being always sentinels awake, ready to raise an alarm on the least appearance of danger. Even when feeding and diving in small parties, the whole never go down at one time, but some are still left above on the look-out.

When the winter sets in severely, and the river is frozen, the canvass-backs retreat to its confluence with the bay, occasionally frequenting air-holes in the ice, which are sometimes made for the purpose, immediately above their favourite grass, to entice them within gunshot of the hut or bush which is usually fixed at a proper distance, and where the gunner lies concealed, ready to take advantage of their distress. A Mr Hill, who lives near James' River, at a place called Herring Creek, informs me, that, one severe winter, he and another person broke a hole in the ice about twenty by forty feet, immediately over a shoal of grass, and took their stand on the shore in a hut of brush, each having three guns well loaded with large shot. The ducks, which were flying up and down the

river in great extremity, soon crowded to this place, so that the whole open space was not only covered with them, but vast numbers stood on the ice around it. They had three rounds, firing both at once, and picked up eighty-eight canvass-backs, and might have collected more, had they been able to get to the extremity of the ice after the wounded ones. In the severe winter of 1779-80, the grass, on the roots of which these birds feed, was almost wholly destroyed in James' River. In the month of January, the wind continued to blow from W.N.W. for twenty-one days, which caused such low tides in the river, that the grass froze to the ice every where, and a thaw coming on suddenly, the whole was raised by the roots and carried off by the fresh. The next winter a few of these ducks were seen, but they soon went away again; and, for many years after, they continued to be scarce, and even to the present day, in the opinion of my informant, have never been so plenty as before.

The canvass-back, in the rich juicy tenderness of its flesh, and its delicacy of flavour, stands unrivalled by the whole of its tribe in this or perhaps any other quarter of the world. Those killed in the waters of the Chesapeake are generally esteemed superior to all others, doubtless from the great abundance of their favourite food which these rivers produce. At our public dinners, hotels, and particular entertainments, the canvass-backs are universal favourites. They not only grace but dignify the table, and their very name conveys to the imagination of the eager epicure the most comfortable and exhilarating ideas. Hence, on such occasions, it has not been uncommon to pay from one to three dollars a-pair for these ducks; and, indeed, at such times, if they can, they must be had, whatever may be the price.

The canvass-back will feed readily on grain, especially wheat, and may be decoyed to particular places by baiting them with that grain for several successive days. Some few years since a vessel loaded with wheat was wrecked near the entrance of Great Egg Harbour, in the autumn, and went to

pieces. The wheat floated out in vast quantities, and the whole surface of the bay was in a few days covered with ducks of a kind altogether unknown to the people of that quarter. The gunners of the neighbourhood collected in boats, in every direction, shooting them ; and so successful were they, that, as Mr Beasley informs me, two hundred and forty were killed in one day, and sold among the neighbours, at twelve and a half cents a-piece, without the feathers. The wounded ones were generally abandoned, as being too difficult to be come up with. They continued about for three weeks, and during the greater part of that time a continual cannonading was heard from every quarter. The gunners called them sea ducks. They were all canvass-backs, at that time on their way from the north, when this floating feast attracted their attention, and for a while arrested them in their course. A pair of these very ducks I myself bought in Philadelphia market at the time, from an Egg Harbour gunner, and never met with their superior, either in weight or excellence of flesh. When it was known among those people the loss they had sustained in selling for twenty-five cents what would have brought them from a dollar to a dollar and a half per pair, universal surprise and regret were naturally enough excited.

The canvass-back is two feet long, and three feet in extent, and, when in good order, weighs three pounds ; the bill is large, rising high in the head, three inches in length, and one inch and three-eighths thick at the base, of a glossy black ; eye, very small ; irides, dark red ; cheeks and fore part of the head, blackish brown ; rest of the head and greater part of the neck, bright glossy reddish chestnut, ending in a broad space of black that covers the upper part of the breast, and spreads round to the back ; back, scapulars, and tertials, white, faintly marked with an infinite number of transverse waving lines or points, as if done with a pencil ; whole lower parts of the breast, also the belly, white, slightly pencilled in the same manner, scarcely perceptible on the breast, pretty thick towards the vent ; wing-coverts, grey, with numerous specks of blackish ; primaries and

secondaries, pale slate, two or three of the latter of which nearest the body are finely edged with deep velvety black, the former dusky at the tips; tail, very short, pointed, consisting of fourteen feathers of a hoary brown; vent and tail-coverts, black; lining of the wing, white; legs and feet, very pale ash, the latter three inches in width, a circumstance which partly accounts for its great powers of swimming.

The female is somewhat less than the male, and weighs two pounds and three quarters; the crown is blackish brown; cheeks and throat, of a pale drab; neck, dull brown; breast, as far as the black extends on the male, dull brown, skirted in places with pale drab; back, dusky white, crossed with fine waving lines; belly, of the same dull white, pencilled like the back; wings, feet, and bill, as in the male; tail-coverts, dusky; vent, white, waved with brown.

The windpipe of the male has a large flattish concave labyrinth, the ridge of which is covered with a thin transparent membrane; where the trachea enters this, it is very narrow, but immediately above swells to three times that diameter. The intestines are wide, and measure five feet in length.

Mr Ord, in his reprint, has added the following interesting observations:—"It is a circumstance calculated to excite our surprise, that the canvass-back, one of the commonest species of our country, a duck which frequents the waters of the Chesapeake in flocks of countless thousands, should yet have been either overlooked by the naturalists of Europe, or confounded with the pochard, a species whose characters are so obviously different. But that this is the fact the editor feels well assured, since he has carefully examined every author of repute, to which he has had access, and has not been enabled to find any description which will correspond to the subject before us. The species, then, we hope, will stand as Wilson's own; and it is no small addition to the fame of the American Ornithology, that it contains the first scientific account of the finest duck that any country can boast of.

"The canvass-back frequents the Delaware in considerable

numbers. The *Valisineria* grows pretty abundantly, in various places, from Burlington, New Jersey, to Eagle Point, a few miles below Philadelphia. Wherever this plant is found there will the ducks be; and they will frequently venture within reach of their enemies' weapons rather than abstain from the gratification of their appetite for this delicious food. The shooters in the neighbourhood of Philadelphia for many years were in the habit of supplying our markets with this species, which always bore the name of red-heads or red-necks; and their ignorance of its being the true canvass-back was cunningly fostered by our neighbours of the Chesapeake, who boldly asserted that only their waters were favoured with this species, and that all other ducks, which seemed to claim affinity, were a spurious race, unworthy of consanguinity. Hence, at the same time, when a pair of legitimate canvass-backs, proudly exhibited from the mail-coach, from Havre-de-Grace, readily sold for two dollars and fifty cents, a pair of the identical species, as fat, as heavy, as delicious, but which had been unfortunately killed in the Delaware, brought only one dollar; and the lucky shooter thought himself sufficiently rewarded in obtaining twenty-five per cent. more for his *red-necks* than he could obtain for a pair of the finest mallards that our waters could afford. But the delusion is now passed; every shooter and huckster knows the distinctive characters of the canvass-back and the red-head; and prejudice no longer controverts the opinion that this species is a common inhabitant of the Delaware; and epicures are compelled to confess that they can discern no difference between our canvass-back, when in season, and that from Spesutie, or Carrol's Island, the notorious shooting ground of the *bon-vivants* of Baltimore.

“The last-mentioned place, though commonly termed an island, is properly a peninsula, situated on the western side of the Chesapeake Bay, a few miles from Baltimore. It is a spot highly favourable for the shooting of water fowl. It extends for a considerable distance into the bay; and, being connected to the main land by a narrow neck, the shooters are enabled

to post themselves advantageously on the isthmus, and intercept the fowl, who, in roving from one feeding ground to another, commonly prefer crossing the land to taking a long flight around the peninsula. In calm weather the shooters have not much luck, the ducks keeping out in the coves, and when they do move, flying high; but should a fresh breeze prevail, especially one from the eastward, rare sport may be anticipated; and it is no unusual circumstance for a party of four or five gentlemen returning home, after a couple of days' excursion, with fifty or sixty canvass-backs, besides some other ducks of inferior note. The greatest flight of ducks commonly takes place between daybreak and sunrise, and while it lasts, the roaring of the fowling-pieces, the bustle of the sportsmen, the fluttering of the fowl, and the plunging of the dogs, constitute a scene productive of intense interest. The dog in most esteem for this amusement is a large breed, partaking of the qualities of the Newfoundland variety. They trust altogether to their sight, and it is astonishing what sagacity they will manifest in watching a flock of ducks that had been shot at, and marking the birds that drop into the water, even at a considerable distance off. When at fault, the motion of their master's hand is readily obeyed by them; and when unable to perceive the object of their search, they will raise themselves in the water for this purpose, and will not abandon the pursuit while a chance remains of succeeding. A generous, well-trained dog, has been known to follow a duck for more than half a mile; and, after having been long beyond the reach of seeing or hearing his master, to return puffing and snorting under his load, which seemed sufficient to drag him beneath the waves. The Editor having been an eyewitness of similar feats of these noble animals, can therefore speak with confidence as to the fact.

“On the Delaware, but few of this species, comparatively, are obtained, for the want of proper situations whence they may be shot on the wing. To attempt to approach them, in open day, with a boat, is unproductive labour, except there be float-

ing ice in the river, at which time, if the shooter clothe himself in white, and paint his skiff of the same colour, he may so deceive the ducks as to get within a few feet of them. At such times it is reasonable to suppose that these valuable birds get no quarter. But there is one caution to be observed, which experienced sportsmen never omit: it is to go always *with* the current; a duck being sagacious enough to know that a lump of ice seldom advances *against* the stream. They are often shot, with us, by moonlight, in the mode related in the foregoing account; the first pair the Editor ever killed was in this manner; he was then a boy, and was not a little gratified with his uncommon acquisition.

“As the *Valisineria* will grow in all our fresh-water rivers, in coves, or places not affected by the current, it would be worth the experiment to transplant this vegetable in those waters where it at present is unknown. There is little doubt the canvass-backs would, by this means, be attracted; and thus would afford the lovers of good eating an opportunity of tasting a delicacy, which, in the opinion of many, is unrivalled by the whole feathered race.

“In the spring, when the duck-grass becomes scarce, the canvass-backs are compelled to subsist upon other food, particularly shell-fish; their flesh then loses its delicacy of flavour, and, although still fat, it is not esteemed by epicures; hence the ducks are not much sought after; and are permitted quietly to feed until their departure for the north.

“Our author states that he had had no certain accounts of this species to the southward of James’ river, Virginia. In the month of January, 1818, the Editor saw many hundreds of these ducks feeding in the Savannah river, not far from Tybee lighthouse. They were known by the name of canvass-backs; but the inhabitants of that quarter considered them as fishing ducks, not fit to be eaten: so said the pilot of the ship which bore the Editor to Savannah. But a pair of these birds having been served up at table, after his arrival, he was convinced, by their delicate flavour, that they had lost little by

their change of residence, but still maintained their superiority over all the water fowl of that region. In the river St John, in East Florida, the Editor also saw a few scattered individuals of this species; but they were too shy to be approached within gunshot.

“The canvass-backs swim very low, especially when fat; and when pursued by a boat, they stretch themselves out in lines, in the manner of the scaup ducks, so that some of the flock are always enabled to reconnoitre the paddler, and give information to the rest of his motions. When the look-out ducks apprehend danger, the stretching up of their necks is the signal, and immediately the whole squadron, facing to the wind, rise with a noise which may be heard at the distance of half a mile.”

RED-HEADED DUCK.—*ANAS FERINA*?—PLATE LXX. FIG. 6.

Peale's Museum, No. 2710.

FULIGULA FERINA.—STEPHENS.*

Steph. Cont. Sh. Zool. p. 193.—*Fuligula ferina*, *Bonap. Synop.* p. 392.—*North. Zool.* ii. p. 451.—*Nyroca ferina*, *Flem. Br. Anim.* p. 108.—*Le Canard miloun*, *Tenn. Man.* ii. 868.—Pochard, or red-headed widgeon, *Mont. Ornith. Dict.* ii. and *Suppl. Bew. Br. Birds*, ii. p. 356.—Red-headed widgeon, *Selby's Illust. Br. Ornith.* pl. 63, fig. 1.

THIS is a common associate of the canvass-back, frequenting the same places, and feeding on the stems of the same grass, the latter eating only the roots; its flesh is very little inferior, and is often sold in our markets for the canvass-back to those unacquainted with the characteristic marks of each. Anxious as I am to determine precisely whether this species

* A well-known duck common to both continents, keeping to the sea or large lakes, and only in very severe winters wandering to any extent inland. Sometimes seen in the decoys, but very seldom taken, from their expertness in diving under the tunnel.—ED.

be the red-headed widgeon, pochard, or dun bird* of England, I have not been able to ascertain the point to my own satisfaction, though I think it very probably the same, the size, extent, and general description of the pochard, agreeing pretty nearly with this.

The red-head is twenty inches in length, and two feet six inches in extent; bill, dark slate, sometimes black, two inches long, and seven-eighths of an inch thick at the base, furnished with a large broad nail at the extremity; irides, flame-coloured: plumage of the head, long, velvety, and inflated, running high above the base of the bill; head, and about two inches of the neck, deep glossy reddish chestnut; rest of the neck and upper part of the breast, black, spreading round to the back; belly, white, becoming dusky towards the vent by closely marked undulating lines of black; back and scapulars, bluish white, rendered grey by numerous transverse waving lines of black; lesser wing-coverts, brownish ash; wing-quills, very pale slate, dusky at the tips; lower part of the back and sides under the wings, brownish black, crossed with regular zigzag lines of whitish; vent, rump, tail, and tail-coverts, black; legs and feet, dark ash.

The female has the upper part of the head dusky brown, rest of the head and part of the neck, a light sooty brown; upper part of the breast, ashy brown, broadly skirted with whitish; back, dark ash, with little or no appearance of white pencilling; wings, bill, and feet nearly alike in both sexes.

This duck is sometimes met with in the rivers of North and South Carolina, and also in those of Jersey and New York, but always in fresh water, and usually at no great distance from the sea;—is most numerous in the waters of the Chesapeake; and, with the connoisseurs in good eating, ranks next in excellence to the canvass-back. Its usual weight is about a pound and three quarters avoirdupois.

The red-head leaves the bay and its tributary streams, in March, and is not seen till late in October.

* Local names given to one and the same duck. It is also called the poker.

The male of this species has a large flat bony labyrinth on the bottom of the windpipe, very much like that of the canvass-back, but smaller; over one of its concave sides is spread an exceeding thin transparent skin, or membrane. The intestines are of great width, and measure six feet in length.

THE MALLARD.—ANAS BOSCHAS.—PLATE LXX. FIG. 7.

Lath. Syn. iii. p. 489.—*Bewick*, ii. p. 291.—*Le Canard sauvage*, *Briss.* vi. p. 318.
4.—*Buff.* ix. p. 415. pl. 7, 8.—*Peale's Museum*, No. 2864.

BOSCHAS MAJOR.—WILLOUGHBY.*

Anas boschas, *Linn. Syst.*—*Gmel.* i. p. 538.—*Bonap. Synop.* p. 382.—*Flem. Br. Anim.* p. 123.—*Le canard sauvage*, *Temm. Man.* p. 385.—*Wild-duck*, *Mont. Ornith. Dict.* ii. and *Supp.*—*Common wild-duck*, *Selby Illust. Br. Ornith.* pl. 5. *Anas (boschas) domestica*, *North. Zool.* ii. p. 442.

THE mallard, or common wild-drake, is so universally known as scarcely to require a description. It measures twenty-four

* This well-known species becomes interesting, when considered as the stock whence the most flourishing duckeries of the poultry-yard have sprung; it is most amply spread over Europe and America, and I have received it from India. Universally known, it is esteemed for the table, and will fetch a higher price in the markets than most of the others in this country, and in America seems only surpassed by the canvass-back. In structure and general economy, it presents a most interesting form, combining the peculiarities of the pelagic and more terrestrial. It will live and find a sustenance in the sea and its coasts, by lakes and rivers, and in the midst of extensive moors and fens; it possesses a powerful frame, and its wings are adapted to strong flight; it can derive its sustenance either from the waters or the more inland pastures and cultivated fields; it is an expert diver when necessity calls it; and its breeding places are chosen by the sides of lakes and marshes, on the stumps of aged trees like the summer duck, and on precipitous cliffs. In the latter situation, I once took the nest of a wild-duck within ten yards' distance from that of a peregrine falcon. It was situated on a projecting knoll of heather, jutting from an ivied cliff, and the tenants must often have seen each other in their passage to and from their precious deposits. In this species we have the type of the genus *Boschas*. The centre feathers of the tail are lengthened, but assume a different form, in being regularly rolled

inches in length, by three feet in extent, and weighs upwards of two pounds and a half; the bill is greenish yellow; irides, hazel; head, and part of the neck, deep glossy changeable green, ending in a narrow collar of white; the rest of the neck and breast are of a dark purplish chestnut; lesser wing-coverts, brown ash; greater, crossed near the extremities with a band of white, and tipped with another of deep velvety black; below this lies the speculum, or beauty-spot, of a rich and splendid light purple, with green and violet reflections, bounded on every side with black; quills, pale brownish ash; back, brown, skirted with paler; scapulars, whitish, crossed with fine undulating lines of black; rump and tail-coverts, black, glossed with green; tertials, very broad, and pointed at the ends; tail, consisting of eighteen feathers, whitish, centred with brown ash, the four middle ones excepted, which are narrow, black, glossed with violet, remarkably concave, and curled upwards to a complete circle; belly and sides, a fine grey, crossed by an infinite number of fine waving lines, stronger and more deeply marked as they approach the vent; legs and feet, orange red.

The female has the plumage of the upper parts dark brown, broadly bordered with brownish yellow; and the lower parts yellow ochre, spotted and streaked with deep brown; the chin and throat, for about two inches, plain yellowish white; wings, bill, and legs, nearly as in the male.

The windpipe of the male has a bony labyrinth, or bladder-like knob, puffing out from the left side. The intestines measure six feet, and are as wide as those of the canvass-back. The windpipe is of uniform diameter, until it enters the labyrinth.

This is the original stock of the common domesticated duck, reclaimed, time immemorial, from a state of nature, and now

or curled up. Some specimens want the white ring round the neck, and in some parts this variety is so common, as to be distinguished by the herds and country people.—ED.

become so serviceable to man. In many individuals, the general garb of the tame drake seems to have undergone little or no alteration ; but the stamp of slavery is strongly imprinted in his dull indifferent eye and grovelling gait, while the lofty look, long tapering neck, and sprightly action of the former, bespeak his native spirit and independence.

The common wild-duck is found in every fresh water lake and river of the United States in winter, but seldom frequents the sea-shores or salt marshes. Their summer residence is the north, the great nursery of this numerous genus. Instances have been known of some solitary pairs breeding here in autumn. In England these instances are more common. The nest is usually placed in the most solitary recesses of the marsh, or bog, amidst coarse grass, reeds, and rushes, and generally contains from twelve to sixteen eggs, of a dull greenish white. The young are led about by the mother in the same manner as those of the tame duck, but with a superior caution, a cunning and watchful vigilance peculiar to her situation. The male attaches himself to one female, as among other birds in their native state, and is the guardian and protector of her and her feeble brood. The mallard is numerous in the rice fields of the southern states during winter, many of the fields being covered with a few inches of water ; and, the scattered grains of the former harvest lying in abundance, the ducks swim about, and feed at pleasure.

The flesh of the common wild-duck is in general and high estimation ; and the ingenuity of man, in every country where it frequents, has been employed in inventing stratagems to overreach these wary birds, and procure a delicacy for the table. To enumerate all these various contrivances would far exceed our limits ; a few, however, of the most simple and effective may be mentioned.

In some ponds frequented by these birds, five or six wooden figures, cut and painted so as to represent ducks, and sunk, by pieces of lead nailed on their bottoms, so as to float at the usual depth on the surface, are anchored in a favourable posi-

tion for being raked from a concealment of brush, &c. on shore. The appearance of these usually attracts passing flocks, which alight, and are shot down. Sometimes eight or ten of these painted wooden ducks are fixed on a frame in various swimming postures, and secured to the bow of the gunner's skiff, projecting before it in such a manner that the weight of the frame sinks the figures to their proper depth; the skiff is then dressed with sedge or coarse grass in an artful manner, as low as the water's edge; and under cover of this, which appears like a party of ducks swimming by a small island, the gunner floats down sometimes to the very skirts of a whole congregated multitude, and pours in a destructive and repeated fire of shot among them. In winter, when detached pieces of ice are occasionally floating in the river, some of the gunners on the Delaware paint their whole skiff or canoe white, and, laying themselves flat at the bottom, with their hand over the side, silently managing a small paddle, direct it imperceptibly into or near a flock, before the ducks have distinguished it from a floating mass of ice, and generally do great execution among them. A whole flock has sometimes been thus surprised asleep, with their heads under their wings. On land, another stratagem is sometimes practised with great success. A large tight hogshead is sunk in the flat marsh, or mud, near the place where ducks are accustomed to feed at low water, and where otherwise there is no shelter; the edges and top are artfully concealed with tufts of long coarse grass and reeds or sedge. From within this the gunner, unseen and unsuspected, watches his collecting prey, and, when a sufficient number offers, sweeps them down with great effect. The mode of catching wild-ducks, as practised in India,* China,† the island of Ceylon, and some parts of South America,‡ has been often described, and seems, if reliance may be placed on those accounts,

* *Naval Chronicle*, vol. ii. p. 473.

† DU HALDE, *History of China*, vol. ii. p. 142.

‡ ULLOA'S *Voyage*, i. p. 53.

only practicable in water of a certain depth. The sportsman, covering his head with a hollow wooden vessel or calabash, pierced with holes to see through, wades into the water, keeping his head only above, and, thus disguised, moves in among the flock, which take the appearance to be a mere floating calabash, while, suddenly pulling them under by the legs, he fastens them to his girdle, and thus takes as many as he can conveniently stow away, without in the least alarming the rest. They are also taken with snares made of horse hair, or with hooks baited with small pieces of sheep's lights, which, floating on the surface, are swallowed by the ducks, and with them the hooks. They are also approached under cover of a stalking horse, or a figure formed of thin boards, or other proper materials, and painted so as to represent a horse or ox. But all these methods require much watching, toil, and fatigue, and their success is but trifling when compared with that of the decoy now used both in France and England,* which, from its superiority over every other mode, is well deserving the attention of persons of this country residing in the neighbourhood of extensive marshes frequented by wild-ducks, as, by this method, mallard and other kinds may be taken by thousands at a time. The following circumstantial account of these decoys, and the manner of taking wild-ducks in them in England, is extracted from Bewick's *History of British Birds*, vol. ii. p. 294:

“In the lakes where they resort,” says the correspondent of that ingenious author, “the most favourite haunts of the fowl are observed: then, in the most sequestered part of this haunt, they cut a ditch about four yards across at the entrance, and about fifty or sixty yards in length, decreasing gradually in width from the entrance to the farther end, which is not more than two feet wide. It is of a circular form, but not bending

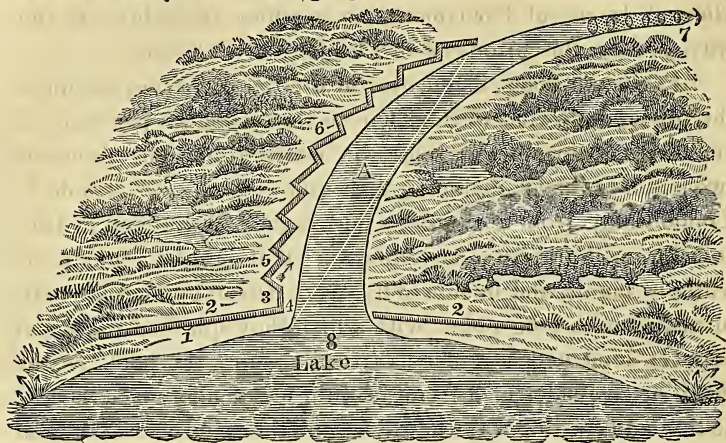
* Particularly in Picardy, in the former country, and Lincolnshire in the latter.

much for the first ten yards. The banks of the lake, for about ten yards on each side of this ditch, (or pipe, as it is called,) are kept clear from reeds, coarse herbage, &c., in order that the fowl may get on them to sit and dress themselves. Across this ditch, poles on each side, close to the edge of the ditch, are driven into the ground, and the tops bent to each other and tied fast. These poles at the entrance form an arch, from the top of which to the water is about ten feet. This arch is made to decrease in height, as the ditch decreases in width, till the farther end is not more than eighteen inches in height. The poles are placed about six feet from each other, and connected together by poles laid lengthwise across the arch and tied together. Over them a net, with meshes sufficiently small to prevent the fowl getting through, is thrown across, and made fast to a reed fence at the entrance, and nine or ten yards up the ditch, and afterwards strongly pegged to the ground. At the farther end of the pipe, a tunnel net, as it is called, is fixed, about four yards in length, of a round form, and kept open by a number of hoops about eighteen inches in diameter, placed at a small distance from each other, to keep it distended. Supposing the circular bend of the pipe to be to the right, when you stand with your back to the lake, on the left hand side a number of reed fences are constructed, called shootings, for the purpose of screening from sight the decoy-man, and in such a manner, that the fowl in the decoy may not be alarmed while he is driving those in the pipe : these shootings are about four yards in length, and about six feet high, and are ten in number. They are placed in the following manner :—



From the end of the last shooting, a person cannot see the lake, owing to the bend of the pipe : there is then no farther occasion for shelter. Were it not for those shootings, the fowl that remain about the mouth of the pipe would be alarmed, if the person driving the fowl already under the net should be exposed, and would become so shy as to forsake the place entirely. The first thing the decoy-man does when he approaches the pipe, is to take a piece of lighted turf or peat, and hold it near his mouth, to prevent the fowl smelling him. He is attended by a dog taught for the purpose of assisting him : he walks very silently about half-way up the shootings, where a small piece of wood is thrust through the reed fence, which makes an aperture just sufficient to see if any fowl are in ; if not, he walks forward to see if any are about the mouth of the pipe. If there are, he stops and makes a motion to his dog, and gives him a piece of cheese or something to eat ; upon receiving it he goes directly to a hole through the reed fence, (No. 1,) and the fowl immediately fly off the bank into the water ; the dog returns along the bank, between the reed fences and the pipe, and comes out to his master at the hole, (No. 2.) The man now gives him another reward, and he repeats his round again, till the fowl are attracted by the motions of the dog, and follow him into the mouth of the pipe. This operation is called working them. The man now retreats farther back, working the dog at different holes till the fowl are sufficiently under the net : he now commands his dog to lie down still behind the fence, and goes forward to the end of the pipe next the lake, where he takes off his hat and gives it a wave between the shooting ; all the fowl under the net can see him, but none that are in the lake can. The fowl that are in sight fly forward ; and the man runs forward to the next shooting and waves his hat, and so on, driving them along till they come to the tunnel net, where they creep in : when they are all in, he gives the net a twist, so as to prevent their getting back : he then takes the net off from the end of the pipe with what fowl he may have caught, and takes them out, one at a

time, and dislocates their necks, and hangs the net on again ; and all is ready for working again.



REFERENCES TO THE CUT.

- No. 1. Dog's hole, where he goes to unbank the fowl.
 2. Reed fences on each side of the mouth of the pipe.
 3. Where the decoy-man shows himself to the fowl first, and afterwards at the end of every shooting.
 4. Small reed fence to prevent the fowl seeing the dog when he goes to unbank them.
 5. The shootings.
 6. Dog's holes between the shootings, used when working.
 7. Tunnel net at the end of the pipe.
 8. Mouth of the pipe.

“ In this manner, five or six dozen have been taken at one drift. When the wind blows directly in or out of the pipe, the fowl seldom work well, especially when it blows in. If many pipes are made in a lake, they should be so constructed as to suit different winds.

“ Duck and mallard are taken from August to June ; teal or widgeon from October to March ; becks, smee, golden-eyes, arps, cricks, and pintails or sea pheasants, in March and April.

“ Poker ducks are seldom taken, on account of their diving and getting back in the pipe.

“ It may be proper to observe here, that the ducks feed during the night, and that all is ready prepared for this sport in

the evening. The better to entice the ducks into the pipe, hemp seed is strewed occasionally on the water. The season allowed, by act of Parliament, for catching these birds in this way, is from the latter end of October till February.

“Particular spots, or decoys, in the fen countries, are let to the fowlers at a rent of from five to thirty pounds per annum; and Pennant instances a season in which thirty-one thousand two hundred ducks, including teals and widgeons, were sold in London only, from ten of these decoys near Wainfleet, in Lincolnshire. Formerly, according to Willoughby, the ducks while in moult, and unable to fly, were driven by men in boats, furnished with long poles, with which they splashed the water between long nets, stretched vertically across the pools, in the shape of two sides of a triangle, into lesser nets placed at the point; and, in this way, he says, four thousand were taken at one driving in Deeping-Fen; and Latham has quoted an instance of two thousand six hundred and forty-six being taken in two days, near Spalding, in Lincolnshire; but this manner of catching them, while in moult, is now prohibited.”

THE GADWALL.—ANAS STREPERA.—PLATE LXXI. FIG. 1.

Le Chipeau, *Briss.* vi. p. 339, 8. pl. 33, fig 1.—*Buff.* ix. 187. *Pl. Enl.* 958.—*Arct. Zool.* p. 575.—*Lath. Syn.* iii. p. 515.—*Peale's Museum*, No. 2750.

CHAULIODUS STREPERA.—SWAINSON ?*

Anas strepera, *Linn. Syst.* i. p. 200.—*Lath. Ind. Ornith.* ii. p. 859.—*Bonap. Synop.* p. 383.—Canard chipeau, ou ridenne, *Temm. Man.* ii. p. 837.—Gadwall or Grey, *Mont. Ornith. Dict.* i. and *Supp.*—*Bew. Br. Birds*, ii. 350.—Gadwall, *Selby's Illust. Br. Ornith.* pl. 51.—*Anas* (*chauliodus*) *strepera*, *North. Zool.* ii. p. 440.—Genus *Chauliodus*, *Swain. Journ. Royal Instit.* No. iv. p. 19.

THIS beautiful duck I have met with in the very distant parts of the United States, viz. on the Seneca Lake, in New York,

* This beautiful duck is remarkable in presenting, next to the shovellers, the greatest developement of lateral laminae of the bill; it is also an expert diver.

In Britain they are rare, but appear more common in the lower countries of

about the 20th of October, and at Louisville, on the Ohio, in February. I also shot it near Big Bone Lick, in Kentucky. With its particular manners or breeding place, I am altogether unacquainted.

The length of this species is twenty inches; extent, thirty-one inches; bill, two inches long, formed very much like that of the mallard, and of a brownish black; crown, dusky brown; rest of the upper half of the neck, brownish white, both thickly speckled with black; lower part of the neck and breast, dusky black, elegantly ornamented with large concentric semicircles of white; scapulars, waved with lines of white on a dusky ground, but narrower than that of the breast; primaries, ash; greater wing-coverts, black, and several of the lesser coverts, immediately above, chestnut red; speculum, white, bordered below with black, forming three broad bands on the wing, of chestnut, black, and white; belly, dull white; rump and tail-coverts, black, glossed with green; tail, tapering, pointed, of a pale brown ash, edged with white; flanks, dull white, elegantly waved; tertials, long, and of a pale brown; legs, orange red.

The female I have never seen. Latham describes it as follows: "Differs in having the colours on the wings duller, though marked the same as the male; the breast, reddish brown, spotted with black; the feathers on the neck and back, edged with pale red; rump, the same, instead of black; and those elegant semicircular lines on the neck and breast wholly wanting."

The flesh of this duck is excellent, and the windpipe of the male is furnished with a large labyrinth.

The gadwall is very rare in the northern parts of the United States; is said to inhabit England in winter, and various parts

Europe, and towards the north. They seem very abundant in Holland; in the months of September and October they were the most common duck in the market, and were often seen in abundance on the lakes. It will show Mr Swainson's genus *Chauliodus*.—ED.

of France and Italy; migrates to Sweden, and is found throughout Russia and Siberia.*

It is a very quick diver, so as to make it difficult to be shot; flies also with great rapidity, and utters a note not unlike that of the mallard, but louder. Is fond of salines and ponds overgrown with reeds and rushes. Feeds during the day, as well as in the morning and evening.

EIDER DUCK.—ANAS MOLLISSIMA.—PLATE LXXI. FIG. 2,
MALE.

L'Oye à duvet, ou l'Eider, *Briss.* vi. p. 294, pl. 29, 3.—*Buff.* ix. p. 103, pl. 6.—*Pl. Enl.* 209.—Great black and white duck, *Edw.* pl. 98.—*Bewick*, ii. p. 279. *Arct. Zool.* No. 480.—*Lath. Syn.* iii. p. 470.—*Peale's Museum*, No. 2706.

SOMATERIA MOLLISSIMA.—LEACH.†

Anas mollissima, *Linn. Syst.* i. p. 198.—Canard eider, *Temm. Man. d'Ornith.* ii. p. 848.—Eider, or Cuthbert's duck, *Mont. Ornith. Dict.* i. and *Supp.*—Eider, *Selby, Illust. Br. Ornith.* p. 70.—Fuligula, (sub-gen. somateria) *mollissima*, *Bonap. Synop.* p. 388.—*Somateria mollissima*, *North Zool.* ii. p. 448.

THE eider duck has been long celebrated in Europe for the abundance and excellence of its down, which, for softness,

* LATHAM.

† This other form among the *Anatidæ* was proposed by Dr Leach, and will contain only two species, the eider and king ducks, both common to Europe and America. It is very well marked, and possesses some peculiarities. The birds are truly sea ducks, keep entirely to that element, and breed on its shores or islands, and are never, as Dr Richardson remarks, seen on fresh water. The form is thick, rather flat and heavy; the plumage of the males possesses decided contrasting colours of black and white; the females, reddish brown; the plumage of the head projects far upon the base of the bill, and is of a thick silky texture, which can be raised or swelled at pleasure, so as to increase the apparent size of the head and neck, and in both species exhibits remarkable colours not often seen among birds, and very difficult for colourists to represent—pistachia green, and a pleasing dull shade of blue verditer. In the scapulars of the *Anatidæ*, we

warmth, lightness, and elasticity, surpasses that of all other ducks. The quantity found in one nest more than filled the crown of a hat, yet weighed no more than three quarters of an ounce ;* and it is asserted that three pounds of this down may be compressed into a space scarce bigger than a man's fist, yet is afterwards so dilatable as to fill a quilt five feet square.†

The native regions of the eider duck extend from 45° N. to the highest latitudes yet discovered, both in Europe and America. Solitary rocky shores and islands are their favourite haunts. Some wandering pairs have been known to breed on the rocky islands beyond Portland, in the district of Maine, which is perhaps the most southern extent of their breeding place. In England, the Fern Isles, on the coast of Northumberland, are annually visited by a few of these birds, being the only place in South Britain where they are known to breed. They occur again in some of the Western Isles of Scotland. Greenland and Iceland abound with them, and here, in particular places, their nests are crowded so close together, that a person can scarcely walk without treading on them. The natives of these countries know the value of the down, and carry on a regular system of plunder both of it, and also of the eggs.

have already seen a variable structure ; they are here of considerable breadth, rigid texture, and curve over the quills, as if curled with an iron. The feet are placed far back, and show great powers for diving. The males undergo a change of plumage, and leave the females as soon as they have commenced sitting, when they may be seen in large flocks by themselves ; they commence their migrations much sooner than the females. It is to this bird that we are principally indebted for the valuable eider down, though many others of the northern aquatic fowl produce one equally fine, which is often mixed with it. Lemmius remarks, that the eiders are in immense profusion on the coasts of Norway and Lapland ; when hatching, the eggs are often the prey of the crows and of *Larus marinus*, who drag the female from her nest and destroy them or the young. The male, however, if he perceives the assault, makes furious attacks, and sometimes succeeds in beating them off. They are very familiar, building close to the houses of the fishermen ; the female will even allow herself to be lifted from the eggs and set down again ; and sometimes a countryman will carry the young in his hat from the nest to the sea, the duck running by his side, moaning gently with anxiety.—ED.

* PENNANT.

† *Salern. Ornith.* p. 416.

The nest is generally formed outwardly of drift grass, dry seaweed, and such like materials; the inside composed of a large quantity of down plucked from the breast of the female. In this soft elastic bed she deposits five eggs, extremely smooth and glossy, of a pale olive colour; they are also warmly covered with the same kind of down. When the whole number is laid, they are taken away by the natives, and also the down with which the nest is lined, together with that which covers the eggs. The female once more strips her breast of the remaining down, and lays a second time; even this, with the eggs, is generally taken away, and it is said that the male, in this extremity, furnishes the third quantity of down from his own breast; but if the cruel robbery be a third time repeated, they abandon the place altogether. One female, during the whole time of laying, generally gives half a pound of down; and we are told, that in the year 1750, the Iceland Company sold as much of this article as amounted to three thousand seven hundred and forty-five banco dollars, besides what was directly sent to Gluckstadt.* The down from dead birds is little esteemed, having lost its elasticity.

These birds associate together in flocks, generally in deep water, diving for shell-fish, which constitute their principal food. They frequently retire to the rocky shores to rest, particularly on the appearance of an approaching storm. They are numerous on the coast of Labrador, and are occasionally seen in winter as far south as the Capes of Delaware. Their flesh is esteemed by the inhabitants of Greenland, but tastes strongly of fish.

The length of this species is two feet three inches, extent, three feet; weight, between six and seven pounds; the head is large, and the bill of singular structure, being three inches in length, forked in a remarkable manner, running high up in the forehead, between which the plumage descends nearly to the nostril; the whole of the bill is of a dull yellowish horn

* *Letters on Iceland*, by UNO VAN TROIL, p. 146.

colour, somewhat dusky in the middle ; upper part of the head, deep velvet black, divided laterally on the hind head by a whitish band ; cheeks, white ; sides of the head, pale pea-green, marked with a narrow line of white dropt from the ear feathers ; the plumage of this part of the head, to the throat, is tumid, and looks as if cut off at the end, for immediately below the neck it suddenly narrows, somewhat in the manner of the buffel-head, enlarging again greatly as it descends, and has a singular hollow between the shoulders behind ; the upper part of the neck, the back, scapulars, lesser wing-coverts, and sides of the rump, are pure white ; lower part of the breast, belly, and vent, black ; tail, primaries, and secondaries, brownish black ; the tertials curiously curved, falling over the wing ; legs, short, yellow ; webs of the feet, dusky.

Latham has given us the following sketch of the gradual progress of the young males to their perfect colours :—" In the first year the back is white, and the usual parts, except the crown, black ; but the rest of the body is variegated with black and white. In the second year, the neck and breast are spotted black and white, and the crown black. In the third, the colours are nearly as when in full plumage, but less vivid, and a few spots of black still remaining on the neck ; the crown, black, and bifid at the back part.

" The young of both sexes are the same, being covered with a kind of hairy down ; throat and breast, whitish ; and a cinereous line from the bill through the eyes to the hind head."*

* *Synopsis*, iii. 471.

FEMALE EIDER DUCK.—PLATE LXXI. FIG. 3.

Peale's Museum, No. 2707.*SOMATERIA MOLLISSIMA*.—LEACH.

THE difference of colour in these two birds is singularly great. The female is considerably less than the male, and the bill does not rise so high in the forehead; the general colour is a dark reddish drab, mingled with lighter touches, and every where spotted with black; wings, dusky, edged with reddish; the greater coverts, and some of the secondaries, are tipped with white; tail, brownish black, lighter than in the male; the plumage in general is centred with bars of black, and broadly bordered with rufous drab; checks and space over the eye, light drab; belly, dusky, obscurely mottled with black; legs and feet, as in the male.

Van Troil, in his *Letters on Iceland*, observes respecting this duck, that “the young ones quit the nest soon after they are hatched, and follow the female, who leads them to the water, where, having taken them on her back, she swims with them a few yards, and then dives, and leaves them floating on the water! In this situation they soon learn to take care of themselves, and are seldom afterwards seen on the land, but live among the rocks, and feed on insects and sea-weed.”

Some attempts have been made to domesticate these birds, but hitherto without success.

THE SMEW, OR WHITE NUN.—*MERGUS ALBELLUS*,

PLATE LXXI.—FIG. 4.

Le petit harle huppé, ou la piette, *Briss.* vi. p. 243, 3. pl. 24, fig. 1.—*Buff.* viii. p. 275, pl. 24.—*Pl. Enl.* 449.—*Bewick*, ii. p. 238.—*Lath. Syn.* iii. p. 428.—*Arct. Zool.* No. 468.

MERGUS ALBELLUS.—LINNÆUS.*

Mergus albellus, *Linn. Syst.* i. p. 209.—*Bonap. Synop.* p. 397.—Harle piette, *Temm. Man. d' Ornith.* ii. p. 887.—Minute merganser, *Mont. Ornith. Dict.* i. and *Supp.*—Lough diver, and red-headed smew, *Penn.* for young and female.—Smew, *Selby, Illust. Br. Ornith.* pl. 69.

THIS is another of those mergansers commonly known in this country by the appellation of fishermen, fisher ducks, or divers. The present species is much more common on the coast of New England than farther to the south. On the shores of New Jersey it is very seldom met with. It is an admirable diver, and can continue for a long time under water. Its food is small fry, shell-fish, shrimps, &c. In England, as with us, the smew is seen only during winter; it is also found in France, in some parts of which it is called *la Piette*, as in parts of England it is named the magpie driver. Its breeding-place is doubtless in the Arctic regions, as it frequents Iceland; and has been observed to migrate with other mergansers and several kinds of ducks up the river Wolga in February.† The smew, or white nun, is nineteen inches in length, and two feet three inches in extent; bill, black, formed very much like that of the red-breasted merganser, but not so strongly

* The male of this merganser is one of the cleanest and most delicate-looking of the genus, the colours being entirely of the purest black and white. The bill presents a shorter and more dilated form than its congeners, approaching almost to some of the more aberrant ducks. It is very rare in this country, and appears only in winter. The propagation and extent of the breeding migrations are only surmised, and we possess no very authentic authority upon the subject; they are said, however, to resemble the others.—*En.*

† *Dec. Russ.* ii. p. 145.

toothed ; irides, dark ; head, crested ; crown, white ; hind head, black ; round the area of the eye, a large oval space of black ; whole neck, breast, and belly, white, marked on the upper and lower part of the breast with a curving line of black ; back, black ; scapulars, white, crossed with several faint dusky bars ; shoulder of the wing and primaries, black ; secondaries and greater coverts, black, broadly tipped with white ; across the lesser coverts, a large band of white ; sides and flanks, crossed with waving lines ; tail, dark ash ; legs and feet, pale bluish slate.

The female is considerably less than the male ; the bill, a dark lead colour ; crest of the same peculiar form as that of the male, but less, and of a reddish brown ; marked round the area of the eyes with dusky ; cheeks, fore part of the neck, and belly, white ; round the middle of the neck, a collar of pale brown ; breast and shoulders, dull brown and whitish intermixed : wings and back, marked like those of the male, but of a deep brownish ash in those parts which in him are black ; legs and feet, pale blue. The young birds, as in the other three species, strongly resemble the female during the first and part of the second year. As these changes of colour, from the garb of the female to that of the male, take place in the remote regions of the north, we have not the opportunity of detecting them in their gradual progress to full plumage. Hence, as both males and females have been found in the same dress, some writers have considered them as a separate species from the smew, and have given to them the title of the red-headed smew.

In the ponds of New England, and some of the lakes in the state of New York, where the smew is frequently observed, these red-headed kind are often found in company, and more numerous than the other, for very obvious reasons, and bear, in the markings, though not in the colours, of their plumage, evident proof of their being the same species, but younger birds or females. The male, like the Muscovy drake, and many others, when arrived at his full size, is nearly one-third

heavier than the female; and this disproportion of weight, and difference of colour, in the full-grown males and females, are characteristic of the whole genus.

RUDDY DUCK.—ANAS RUBIDUS.

PLATE LXXI. FIG. 5. MALE.

Peale's Museum, No. 2808.

FULIGULA RUBIDA.—BONAPARTE.*

Fuligula (oxyura) rubida, *Bonap. Synop.* p. 391.—*Fuligula rubida*, *North. Zool.* ii. p. 455.—*Anas Jamaicensis*, *Ord's Edit.* p. 133.

THIS very rare duck was shot some years ago on the river Delaware, and appears to be an entire new species. The specimen here figured, with the female that accompanies it, and which was killed in the same river, are the only individuals of their kind I have met with. They are both preserved in the superb museum of my much respected friend, Mr Peale, of this city.

On comparing this duck with the description given by Latham of the Jamaica shoveller, I was at first inclined to believe I had found out the species; but a more careful examination of both satisfied me that they cannot be the same, as the present differs considerably in colour; and, besides, has some peculiarities which the eye of that acute ornithologist could not possibly have overlooked, in his examination of the species said

* Bonaparte has proposed this form as the type of a sub-genus, under the name of *Oxyura*, from the form of the tail. And Mr Swainson observes, "We suspect that this bird, and one or two others of similar form, found by us in tropical Brazil, will constitute a sub-genus." There are many modifications from the *Fuligula* in this bird, which would with additional species, entitle a sub-genus, and, in that case, *Oxyura* may be adopted. They seem very rare, and Wilson has the merit of first distinguishing them; the bill becomes much broader at the tip, and the lamellæ are more prominent than in *Fuligula*; the feet are placed very far back, and the hind toe is furnished with a much narrower membrane.—ED.

to have been received by him from Jamaica. Wherever the general residence of this species may be, in this part of the world, at least, it is extremely rare, since among the many thousands of ducks brought to our markets during winter, I have never heard of a single individual of the present kind having been found among them.

The ruddy duck is fifteen inches and a half in length, and twenty-two inches in extent; the bill is broad at the tip, the under mandible much narrower, and both of a rich light blue; nostrils small, placed in the middle of the bill; cheeks and chin, white; front, crown, and back part of the neck, down nearly to the back, black; rest of the neck, whole back, scapulars, flanks, and tail-coverts, deep reddish brown, the colour of bright mahogany; wings, plain pale drab, darkest at the points; tail, black, greatly tapering, containing eighteen narrow-pointed feathers; the plumage of the breast and upper part of the neck is of a remarkable kind, being dusky olive at bottom, ending in hard bristly points of a silvery grey, very much resembling the hair of some kinds of seal skins; all these are thickly marked with transverse curving lines of deep brown; belly and vent, silver grey, thickly crossed with dusky olive; under tail-coverts, white; legs and feet, ash-coloured.

FEMALE RUDDY DUCK.—PLATE LXXI. FIG. 6.

Peale's Museum, No. 2809.

FULIGULA RUBIDA.—BONAPARTE, YOUNG.

THIS is nearly of the same size as the male; the front, lores, and crown, deep blackish brown; bill, as in the male, very broad at the extremity, and largely toothed on the sides, of the same rich blue; cheeks, a dull cream; neck, plain dull drab, sprinkled about the auriculars with blackish; lower part of the neck and breast, variegated with grey, ash, and reddish brown; the reddish dies off towards the belly, leaving this last

of a dull white, shaded with dusky ash; wings, as in the male; tail, brown; scapulars, dusky brown, thickly sprinkled with whitish, giving them a grey appearance; legs, ash.

A particular character of this species is its tapering sharp pointed tail, the feathers of which are very narrow; the body is short; the bill, very nearly as broad as some of those called shovellers; the lower mandible much narrower than the upper.

Mr Ord has added a very elaborate description in his edition of this work, completing the history of this bird, which we have thought best to print, as showing many points of discussion; we, however, consider the species established as above named.

“ In the first edition of this work, the author states that the two ducks of this species figured in the plate, as male and female, were the only individuals that he had ever met with. They had been shot on the river Delaware; and were deposited in Peale’s Museum. ‘ On comparing this duck,’ he observes, ‘ with the description given by Latham of the *Jamaica shoveller*, I was at first inclined to believe I had found out the species; but a more careful examination of both satisfied me that they cannot be the same, as the present differs considerably in colour; and, besides, has some peculiarities which the eye of that acute ornithologist could not possibly have overlooked, in his examination of the species said to have been received by him from Jamaica. Wherever the general residence of this species may be, in this part of the world, at least, it is extremely rare, since among the many thousands of ducks brought to our markets during winter, I have never heard of a single individual of the present kind having been found among them.’

“ It is a circumstance in ornithology well worthy of note, that migratory birds frequently change their route, and, consequently, become common in those districts where they had been either unknown, or considered very rare. Of the *Sylvia magnolia*, Wilson declares that he had seen but two individuals, and these in the western country; the *Muscicapa cucul-*

lata he says is seldom observed in Pennsylvania, and the northern states; the *Muscicapa pusilla*, and the *Muscicapa Canadensis*, he considered rare birds with us; notwithstanding, in the month of May, 1815, all of these were seen in our gardens; and the Editor noted the last mentioned as among the most numerous of the passenger birds of that season.

“The subject of this chapter affords a case in point. The year subsequent to the death of our author, this duck began to make its appearance in our waters. In October, 1814, the Editor procured a female, which had been killed from a flock, consisting of five, at Windmill Island, opposite to Philadelphia. In October, 1818, he shot three individuals, two females and a male; and in April last another male, all of which, except one, were young birds. He has also, at various times, since 1814, seen several other male specimens of this species, not one of which was an adult. In effect, the only old males which he has ever seen are that in Peale’s Museum, and another in the Cabinet of the Academy of Natural Sciences of Philadelphia.

“The duck figured in the plate as the female was a young male, as the records of the Museum show; the great difference between its colours and markings, and those of the full-plumaged male, having induced the author to conclude it was a female, although he was perfectly familiar with the fact, that the young males of several species of this genus so nearly resemble the other sex, it requires a very accurate eye, aided by much experience, to distinguish them by their external characters. This is precisely the case with the present species; the yearlings of both sexes are alike; and it is not until the succeeding spring that those characters appear in the males which enable one to indicate them, independent of dissection.

“The opinion of our author that this species is not the Jamaica shoveller of Latham, the Editor cannot subscribe to, it appearing to him that the specimen from which Latham took his description, was a young male of the duck now before us.

The latter informs us that the species appears in Jamaica in October or November ; remains till March ; and then retires to the north. This account coincides with ours : we see the bird on its way to the south in October ; it reaches Jamaica in November ; it departs thence in March, and revisits us, in regular progression, in April. Where its summer residence is we are not informed ; and we are equally ignorant whether the species is numerous in any part of our continent or not.

“ Judging from the descriptions of the Ural duck of European writers, there should seem to be a great affinity between that and the present. Through the polite attention of Mr Charles Bonaparte, the Editor was enabled to examine a female specimen of the former ; and as he perceived some differences, he will here note them. The bill of the Ural duck, from the angle of the mouth, is two inches long ; that of our duck is one inch and three quarters, it is also less gibbous at the base than in the former, and it is less depressed above : the tail feathers of the Ural duck are guttered their whole length ; those of the ruddy duck are slightly canaliculated at their tips ; the lateral membrane of the inner toe of the latter is not half the breadth of that of the former. In other respects the females of the two species much resemble each other. In order to draw a just parallel, it would be necessary to examine a male specimen of the European bird, which our cabinets do not possess.

“ The adult male, figured in the plate, is thus described by our author : ‘ Length, fifteen inches and a half ; extent, twenty-two inches ; bill, broad at the tip, the under mandible much narrower than the upper, and *both* of a rich light blue ; * nostrils small, placed in the middle of the bill ; cheeks and chin white ; front, crown, and back part of the neck down nearly to the back, black ; rest of the neck, whole back, scapulars, flanks, and tail-coverts, deep reddish brown, the colour of

* So coloured in Peale's specimen ; but there is reason to conjecture that the colour of the upper mandible alone was a blue ash.

bright mahogany; wings, pale plain drab, darkest at the points; tail, black, greatly tapering, containing eighteen narrow-pointed feathers; the plumage of the breast, and upper part of the neck, is of a remarkable kind, being dusky olive at bottom, ending in hard bristly points of a silvery grey, very much resembling the hair of some kinds of seal-skins—this plumage is thickly marked with transverse curving lines of deep brown; belly and vent, silver grey, thickly crossed with dusky olive; under tail-coverts, white; legs and feet, ash-coloured.’

“The female is fifteen inches in length; bill, to the angle of the mouth, one inch and three quarters long, its lower half very broad, of a deep dusky olive, the nail resembling a narrow clasp of iron; nostrils, oval, with a curved furrow below them; eyes, small and dark; the upper part of the head, from the bill to the hind head, variegated with shining bronze and blackish brown, the latter crossing the head in lines; cheeks, white, mixed with dusky, and some touches of bronze; lores, drab and dusky, mixed with a small portion of white; neck, short and thick, its lower half above, extending between the shoulders, drab, mixed with dusky; throat, and whole lower parts, dusky ash, the plumage tipped with dull white, having a silver grey appearance; the upper parts are dusky, marked or penciled with pale ferruginous, and dull white; breast, slightly tinged with reddish brown; the wings are small, greatly concave, and, when closed, are short of the extremities of the tail-coverts, about three quarters of an inch; they are dusky, their coverts finely dotted or powdered with white; tail, dusky, marked at its extremity with a few very fine dots of reddish white; it extends beyond its upper coverts two inches and a half; under tail-coverts, white; legs and feet, dusky slate; weight, sixteen ounces and a half. The gizzard of the above contained sand, and some small seeds. Her eggs were numerous, and tolerably large; hence, as she was shot in the month of October, it was conjectured that she was a bird of the preceding year.

“The young male, shot in April last, measured fifteen inches in length; its irides were dark brown; bill, elevated at the base, slightly gibbous, and blue ash, from the nostrils to the tip, mixed with dusky, lower mandible, yellowish flesh colour, marbled with dusky; crown, brown black; throat and cheeks, as far as the upper angle of the bill, white, stained with bright yellow ochre; auriculars, almost pure white; the black from the crown surrounded the eyes, and passed round the white of the auriculars; hind head, black, mixed with ferruginous; breast and shoulders, bright ferruginous; belly, ash and silver white; back and scapulars, liver brown, finely penciled with grey and reddish white; rump and upper tail-coverts, the same ground colour, but the markings not so distinct; wings, light liver brown, the lesser coverts finely powdered with grey; on the back and scapulars, the flanks, and around the base of the neck, the brownish red, or bright mahogany-coloured plumage, which distinguishes the adult male, was coming out; inner webs of the tail, partly dusky, outer webs, for two-thirds of their length, and the tip, dirty ferruginous; legs, blue ash in front, behind, the toes and webs, dusky. When the tail is not spread, it is somewhat conical, and its narrow-pointed feathers are slightly guttered at their tips; when spread, it is wedge-shaped. The trachea is of nearly equal diameter throughout; and has no labyrinth or enlargement at its lower part.

“Another young male, shot in October, measured fifteen and a quarter inches in length, and twenty-three inches in breadth; bill, greenish black, lower mandible, yellowish flesh colour, mixed with dusky; from the bill to the hind head a deep liver brown, the tips of the plumage bronzed; whole upper parts dark umber brown, penciled with pale ferruginous, buff and white; from the corner of the mouth, a brown marking extended towards the eye; tail, dusky, ash-coloured at its extremity; legs and feet, dusky ash, toes paler, having a yellowish tinge, webs dusky, claws sharp.

“The shafts of the tail feathers of all these specimens, except

that shot in April, projected beyond the webs ; in one specimen, the shaft of one of the middle feathers projected an inch, and was ramified into rigid bristles, resembling those of the tail of Buffon's *Sarcelle à queue épineuse de Cayenne*, Pl. Enl. 967 ; in all the specimens, there was the appearance of the tail feathers having been furnished with the like process, but which had been rubbed off. Can it be that this duck makes use of its tail in climbing up the fissures of rocks, or the hollows of trees ? Its stiff narrow feathers, not unlike those of the tail of a woodpecker, would favour this supposition. It is worthy of note, that the tail of Mr Bonaparte's female specimen, alluded to above, is thus rubbed.

“ The plumage of the neck and breast, which Wilson says is of a remarkable kind, that is, stiff and bristly at the tips, is common to several ducks, and therefore is no peculiarity.

“ The body of this species is broad, flat and compact ; its wings, short and concave ; its legs placed far behind ; and its feet uncommonly large ; it consequently is an expert diver. It flies with the swiftness, and in the manner, of the buffel-head ; and it swims precisely as Latham reports the ural duck to swim, with the tail immersed in the water as far as the rump ; but whether it swims thus low with the view of employing its tail as a rudder, as Latham asserts of the ural, or merely to conceal itself from observation, as the scaup duck is wont to do when wounded, and as all the divers do when pursued, I cannot determine.

“ This is a solitary bird ; and with us we never see more than five or six together, and then always apart from other ducks. It is uncommonly tame, so much so, that, by means of my skiff, I have never experienced any difficulty in approaching within a few yards of it. Its flesh I do not consider superior to that of the buffel-head, which, with us, is a duck not highly esteemed.

“ I should not be surprised if Buffon's *Sarcelle à queue épineuse de Cayenne* should turn out to be this species. The characters of the two certainly approximate ; but as I have not been en-

abled to settle the question of their identity in my own mind, I shall, for the present, let the affair rest."

THE BRANT.—ANAS BERNICLA.—PLATE LXXII. FIG. 1.

Le cravant, *Briss.* vi. p. 304, 16, pl. 31.—*Buff.* ix. p. 87.—*Bew.* ii. p. 277.—*Lath. Syn.* iii. p. 467.—*Arct. Zool.* No. 478.—*Peale's Museum*, No. 2704.

BERNICLA BRENTA.—STEPHENS.*

Bernicla brenta, *Steph. Cont. Sh. Zool.* xii. p. 46.—Oie cravant, *Temm. Man.* ii. p. 824.—Anser brenta, *Flem. Br. Anim.* p. 127.—Anser bernicla, *North. Zool.* ii. p. 469.—Brent, or Boord goose, *Mont. Orn. Dict. and Supp.*—*Bew. Br. Birds*, ii. p. 311.—Brent bernicle, *Selby, Illust. Br. Orn.* pl. 65.

THE brant, or, as it is usually written, *brent*, is a bird well known on both continents, and celebrated in former times throughout Europe for the singularity of its origin, and the strange transformations it was supposed to undergo previous to its complete organization. Its first appearance was said to be in the form of a barnacle shell adhering to old water-soaked logs, trees, or other pieces of wood taken from the sea. Of this goose-bearing tree, Gerard, in his *Herbal*, published in 1597, has given a formal account, and seems to have reserved it for the conclusion of his work as being the most wonderful of all he had to describe. The honest naturalist, however, though his belief was fixed, acknowledges that his own personal information was derived from certain shells which adhered to a rotten tree that he dragged out of the sea between Dover and Romney, in England; in some of which he found "living things without forme or shape; in others which were nearer

* Stephens first applied this title, as a generic one, to a considerable number of birds, and gives, as their characters, "distinguished from the geese by their shorter and slenderer beak, the edges of which are reflected over the lamellæ, and obstruct the view of them." We shall consider the form to which that title should be restricted to be that of the present—the *B. erythropus*, and *B. ruficollis*. Many of those admitted by Stephens show very different characters, and will range elsewhere.—Ed.

come to ripeness, living things that were very naked, in shape like a birde; in others, the birds covered with soft downe, the shell half open, and the birde readie to fall out, which no doubt were the foules called Barnakles.”* Ridiculous and chimerical as this notion was, it had many advocates, and was at that time as generally believed, and with about as much reason too, as the present opinion of the annual submersion of swallows, so tenaciously insisted on by some of our philosophers, and which, like the former absurdity, will in its turn disappear before the penetrating radiance and calm investigation of truth.

The brant and barnacle goose, though generally reckoned two different species, I consider to be the same. Among those large flocks that arrive on our coasts about the beginning of October, individuals frequently occur corresponding in their markings with that called the bernacle of Europe; that is, in having the upper parts lighter, and the front, cheeks, and chin whitish. These appear evidently a variety of the brant, probably young birds: what strengthens this last opinion is the fact, that none of them are found so marked on their return northward in the spring.

The brant is expected at Egg Harbour, on the coast of New Jersey, about the 1st of October, and has been sometimes seen as early as the 20th of September. The first flocks generally remain in the bay a few days, and then pass on to the south. On recommencing their journey, they collect in one large body, and, making an extensive spiral course, some miles in diameter, rise to a great height in the air, and then steer for the sea, over which they uniformly travel; often making wide circuits to avoid passing over a projecting point of land. In these aerial routes, they have been met with many leagues from shore, travelling the whole night. Their line of march very much resembles that of the Canada goose, with this exception, that frequently three or four are crowded together in the front, as if striving for precedence. Flocks continue to

* See GERARD's *Herbal*, Art. Goose-bearing Tree.

arrive from the north, and many remain in the bay till December, or until the weather becomes very severe, when these also move off southwardly. During their stay, they feed on the bars at low water, seldom or never in the marshes ; their principal food being a remarkably long and broad-leaved marine plant, of a bright green colour, which adheres to stones, and is called, by the country people, sea cabbage ; the leaves of this are sometimes eight or ten inches broad, by two or three feet in length : they also eat small shell-fish. They never dive, but wade about, feeding at low water. During the time of high water, they float in the bay in long lines, particularly in calm weather. Their voice is hoarse and honking, and, when some hundreds are screaming together, reminds one of a pack of hounds in full cry. They often quarrel among themselves, and with the ducks, driving the latter off their feeding ground. Though it never dives in search of food, yet, when wing-broken, the brant will go one hundred yards at a stretch under water ; and is considered, in such circumstances, one of the most difficult birds to kill. About the 15th or 20th of May, they reappear on their way north ; but seldom stop long, unless driven in by tempestuous weather.

The breeding place of the brant is supposed to be very far to the north. They are common at Hudson's Bay, very numerous in winter on the coasts of Holland and Ireland ; are called in Shetland Harra geese, from their frequenting the sand of that name ; they also visit the coast of England. Buffon relates, that in the severe winters of 1740 and 1765, during the prevalence of a strong north wind, the brant visited the coast of Picardy, in France, in prodigious multitudes, and committed great depredations on the corn, tearing it up by the roots, trampling, and devouring it ; and, notwithstanding the exertions of the inhabitants, who were constantly employed in destroying them, they continued in great force until a change of weather carried them off.

The brant generally weighs about four pounds avoirdupois, and measures two feet in length, and three feet six inches in

extent; the bill is about an inch and a half long, and black; the nostril large, placed nearly in its middle; head, neck, and breast, black, the neck marked with a spot of white, about two inches below the eye; belly, pale ash, edged with white; from the thighs backwards, white; back and wing-coverts, dusky brownish black, the plumage lightest at the tips; rump and middle of the tail-coverts, black; the rest of the tail-coverts, pure white, reaching nearly to the tip of the tail, the whole of which is black, but usually concealed by the white coverts; primaries and secondaries, deep black; legs, also black; irides, dark hazel.

The only material difference observable between the plumage of the male and female, is, that in the latter the white spot on the neck is less, and more mottled with dusky. In young birds it is sometimes wanting, or occurs on the front, cheeks, and chin; and sometimes the upper part of the neck only is black;* but in full-plumaged birds of both sexes, the markings are very much alike.

The brant is often seen in our markets for sale. Its flesh, though esteemed by many, tastes somewhat sedgy, or fishy.†

* The figure of this bird given by Bewick, is in that state.

† Mr Ord adds:—"The individual figured in the plate was shot by the Editor, at Great Egg Harbour, on the 19th of May, 1813. It had been compelled to land by a storm, which surprised it while travelling to the north. The procuring of this bird was a fortunate occurrence for Mr Wilson, he having omitted to make a drawing while specimens were to be obtained during their sojourn on our coast. The following day, the author and his friend returned home from their last shooting expedition to the sea-shore; and, on the 23d of August, the ingenious and excellent Wilson bade adieu to this world for ever."—
Ed.

SCOTER DUCK.—ANAS NIGRA.—PLATE LXXII. FIG. 2.

Le macreuse, *Briss.* vi. p. 420, pl. 38. fig. 2.—*Buff.* ix. p. 234, pl. 16.—*Pl. Enl.* 978.—*Bewick*, ii. p. 288.—*Arct. Zool.* No. 484.—*Lath. Syn.* iii. p. 480.—*Peale's Museum*, No. 2658.

OIDEMIA NIGRA.—FLEMING.*

Oidemia nigra, *Flem. Br. Anim.* p. 119.—*North. Zool.* ii. p. 450.—*Bonap. Synop.* p. 390.—Canard macreuse, *Temm. Man.* ii. p. 856.—Scoter, or black diver, *Mont. Ornith. Dict.* ii. and *Supp.*—*Bew. Br. Birds*, ii. p. 325.—Black scoter, *Selby, Illust. Br. Orn.* pl. 68.

THIS duck is but little known along our sea-coast, being more usually met with in the northern than southern districts, and only during the winter. Its food is shell-fish, for which it is almost perpetually diving. That small bivalve so often mentioned, small mussels, spout fish, called on the coast, razor handles, young clams, &c., furnish it with abundant fare; and, wherever these are plenty, the scoter is an occasional visitor. They swim, seemingly at ease, amidst the very roughest of the surf, but fly heavily along the surface, and to no great distance. They rarely penetrate far up our rivers, but seem to prefer the neighbourhood of the ocean, differing in this respect from the cormorant, which often makes extensive visits to the interior.

The scoters are said to appear on the coasts of France in great numbers, to which they are attracted by a certain kind of small bivalve shell-fish, called *vaimeaux*, probably differing little from those already mentioned. Over the beds of these shell-fish the fishermen spread their nets, supporting them, horizontally, at the height of two or three feet from the bottom. At the flowing of the tide the scoters approach in great

* The plumage on the head and neck of this bird is remarkable for its rigid texture and the narrow hackled shape of the feathers.—ED.

numbers, diving after their favourite food, and soon get entangled in the nets. Twenty or thirty dozen have sometimes been taken in a single tide. These are sold to the Roman Catholics, who eat them on those days on which they are forbidden by their religion the use of animal food, fish excepted; these birds, and a few others of the same fishy flavour, having been exempted from the interdict, on the supposition of their being cold-blooded, and partaking of the nature of fish.*

The scoter abounds in Lapland, Norway, Sweden, Russia, and Siberia. It was also found by Osbeck, between the islands of Java and St Paul, lat. 30 and 34, in the month of June.†

This species is twenty-one inches in length, and thirty-four in extent, and is easily distinguished from all other ducks by the peculiar form of its bill, which has at the base a large elevated knob, of a red colour, divided by a narrow line of yellow, which spreads over the middle of the upper mandible, reaching nearly to its extremity, the edges and lower mandible are black; the eyelid is yellow; irides, dark hazel; the whole plumage is black, inclining to purple on the head and neck; legs and feet, reddish.

The female has little or nothing of the knob on the bill; her plumage, above, a sooty brown, and below of a greyish white.

* BEWICK.

† *Voyage*, i. p. 120.

VELVET DUCK.—ANAS FUSCA.—PLATE LXXII. FIG. 3.

Le grande macreuse, *Briss.* vi. p. 423, 29.—*Buff.* ix. p. 242.—*Pl. Enl.* 956.—*Arct. Zool.* No. 482.—*Bewick,* ii. p. 286.—*Lath. Syn.* iii. p. 482.—*Peale's Museum,* No. 2658 ; female.

OIDEMIA FUSCA.—FLEMING.*

Oidemia fusca, *Flem. Br. Anim.* p. 119.—*Bonap. Synop.* p. 390.—*North Zool.* ii. p. 450.—Canard double macreuse, *Temm. Man.* ii. p. 854.—Velvet duck, *Mont. Ornith. Dict.*—*Bew. Br. Birds,* ii. 322.—Velvet scoter, *Selby, Illust. Br. Ornith.* pl. 67.

THIS and the preceding are frequently confounded together as one and the same species by our gunners on the sea-coast. The former, however, differs in being of greater size ; in having a broad band of white across the wing ; a spot of the same under the eye ; and in the structure of its bill. The habits of both are very much alike ; they visit us only during the winter ; feed entirely on shell-fish, which they procure by diving ; and return to the northern regions early in spring to breed. They often associate with the scoters, and are taken frequently in the same nets with them. Owing to the rank, fishy flavour of its flesh, it is seldom sought after by our sportsmen or gunners, and is very little esteemed.

The velvet duck measures twenty-three inches in length, and two feet nine inches in extent, and weighs about three

* This, with the preceding, and the *O. perspicillata*, constitute the American species of Fleming's genus *Oidemia*. They are all visitants also of the European Continent during winter, and, with the exception of the last, are of rather common occurrence. They are truly sea-ducks, and never almost leave that element except during the season of incubation. They are expert divers, and feed on fish and marine moluscæ ; we find, therefore, the foot expanded, the hallux furnished with a broad membrane, and the legs placed far back. The bill is expanded, and generally swollen at the base ; the plumage thick and compact, and of glossy smoothness ; the wings short, but firm, and sharp-pointed, capable, apparently, of a strong flight for a short while, but unfitted for any prolonged exertion.—ED.

pounds; the bill is broad, a little elevated at the base, where it is black, the rest red, except the lower mandible, which is of a pale yellowish white; both are edged with black, and deeply toothed; irides, pale cream; under the eye is a small spot of white; general colour of the plumage brownish black, the secondaries excepted, which are white, forming a broad band across the wing; there are a few reflections of purple on the upper plumage; the legs are red on the outside, and deep yellow, sprinkled with blackish, on the inner sides; tail, short and pointed.

The female is very little less than the male; but differs considerably in its markings. The bill is dusky; forehead and cheeks, white; under the eye, dull brownish; behind that, a large oval spot of white; whole upper parts and neck, dark-brownish drab; tips of the plumage, lighter; secondaries, white; wing-quills, deep brown; belly, brownish white; tail, hoary brown; the throat is white, marked with dusky specks; legs and feet, yellow.

Latham informs us, that this species is sometimes seen on the coast of England, but is not common there; that it inhabits Denmark and Russia, and, in some parts of Siberia, is very common. It is also found at Kamtschatka, where it is said to breed, going far inland to lay; the eggs are eight or ten, and white; the males depart, and leave the females to remain with the young until they are able to fly. In the river Ochotska they are so numerous that a party of natives, consisting of fifty or more, go off in boats, and drive these ducks up the river before them, and, when the tide ebbs, fall on them at once, and knock them on the head with clubs, killing such numbers that each man has twenty or thirty for his share.*

* *History of Kamtschatka*, p. 160.

HARLEQUIN DUCK.—ANAS HISTRIONICA.

PLATE LXXII. FIG. 4.

Le canard à collier de Terre Neuve, *Briss.* vi. p. 362, 14.—*Buff.* ix. p. 250.—*Pl. Enl.* 798.—*Arct. Zool.* No. 490.—*Lath. Syn.* iii. p. 484.

CLANGULA HISTRIONICA.—LEACH.*

Clangula histrionica, *Bonap. Synop.* p. 394.—*North. Zool.* ii. p. 459.—Canard à collier, ou histrion, *Temm. Man.* ii. p. 878.

THIS species is very rare on the coasts of the middle and southern states, though not unfrequently found off those of New England, where it is known by the dignified title of the *Lord*, probably from the elegant crescents and circles of white which ornament its neck and breast. Though an inhabitant of both continents, little else is known of its particular manners than that it swims and dives well; flies swift, and to a great height; and has a whistling note. Is said to frequent the small rivulets inland from Hudson's Bay, where it breeds. The female lays ten white eggs on the grass; the young are prettily speckled. It is found on the eastern continent as far south as Lake Baikal, and thence to Kamtschatka, particularly up the river Ochotska; and was also met with at Aoonalashka and Iceland.† At Hudson's Bay, it is called the painted duck; at Newfoundland, and along the coast of New England, the lord; it is an active vigorous diver, and often seen in deep water, considerably out at sea.

The harlequin duck, so called from the singularity of its markings, is seventeen inches in length, and twenty-eight

* Dr Richardson observes of this duck—" *C. histrionica* haunts eddies under cascades, and rapid streams. It takes wing at once when disturbed, and is very vigilant. We never saw it associating with any other duck, and it is a rare bird."—ED.

† LATHAM.

inches in extent; the bill is of moderate length, of a lead colour, tipped with red; irides, dark; upper part of the head, black; between the eye and bill, a broad space of white, extending over the eye, and ending in reddish; behind the ear, a similar spot; neck, black; ending below in a circle of white; breast, deep slate; shoulders or sides of the breast, marked with a semi-circle of white; belly, black; sides, chestnut; body above, black, or deep slate, some of the scapulars, white; greater wing-coverts, tipped with the same; legs and feet, deep ash; vent and pointed tail, black.

The female is described as being less, "the forehead, and between the bill and eye, white, with a spot of the same behind the ear; head, neck, and back, brown, palest on the fore part of the neck; upper part of the breast, and rump, red brown; lower breast and belly, barred pale rufous and white; behind the thighs, rufous and brown; scapulars and wing-coverts, rufous brown; outer greater ones, blackish; quills and tail, dusky, the last inclining to rufous; legs, dusky."*

The few specimens of this duck which I have met with, were all males; and from the variation in their colours it appears evident that the young birds undergo a considerable change of plumage before they arrive at their full colours. In some the white spot behind the eye was large, extending irregularly half way down the neck; in others confined to a roundish spot.

The flesh of this species is said to be excellent.

* LATHAM.

DUSKY DUCK.—ANAS OBSCURA.—PLATE LXXII. FIG. 5.

Arct. Zool. No. 469.—*Lath Syn.* iii. p. 545.—*Peale's Museum*, No. 2880.

BOSCHAS? *OBSCURA*.—JARDINE.*

Anas obscura, *Bonap. Synop.* p. 384.

THIS species is generally known along the sea-coast of New Jersey, and the neighbouring country, by the name of the black

* Having now arrived at the conclusion of a group which holds a very prominent rank in the ornithology of Northern America, a few general observations regarding their economy, with an enumeration of those species omitted by Wilson which have been since discovered, may not be deemed improper.

The *Anatidæ*, or those birds generally known under the denominations of ducks, geese, and swans, taken as a family, will range with groups of great extent and varied form, as the falcons, the parrots, or pigeons, and will present similar modifications. The characters of the greater part of the groups which inhabit the northern and temperate regions of the world, have been already drawn by Dr Leach and Dr Fleming, and one sub-family has been more lately analyzed by Mr Swainson, as far as our knowledge of them extends, apparently with tolerable accuracy. They, however, want comparison with the tropical forms, which depart so much in their manners from those we are accustomed to see, and by which our opinions have hitherto been led. The wood ducks, constituting Mr Swainson's genus *Dendronessa*—the long-legged whistling ducks of India—those birds allied to the little Gambia goose, and those approaching in their form to the *Grallatores*, all want our close examination.

In distribution, the *Anatidæ* extend over the world, from the warmest tropics to the extreme arctic cold, but exist in greatest abundance near the confines of temperate regions, and in northern latitudes. Their habits may be called truly aquatic, as the presence of water is necessary, even in the most aberrant forms, for their healthy support. Some groups are exclusively aquatic, and never quit the sea or large inland lakes, except during the season when the duties of incubation for a while call them to the shore. These may be termed pelagic or sea ducks, and feed on fish and moluscæ; others delight in lakes and rivers as well as the sea, resort more frequently to the land, seek the same nourishment, and both are expert divers. Some hold a middle way, are as much on land as on water, and, in addition to the food of the truly sea species, live on the spawn of fresh-water fish, insects peculiar to muddy banks and slimy pools, with vegetables, such as the tender shoots of the grasses or newly-sown grains, or, while on

duck, being the most common and most numerous of all those of its tribe that frequent the salt marshes. It is only partially

the shores, upon the *Zostera marina*; while one or two forms resemble the gallatorial birds, and are more independent of water and aquatic nourishment. In their breeding places, they show a like variety, choosing the reedy banks of lakes and rivers, the treacherous morass, the cliffs and desert sands of the sea-shore, the burrows of various animals, the hollows of decaying trees in the stupendous forests of America, or in India the welcome shade of the sacred banyan.

Their uses are various and extensive, either as food, or their skins, feathers, and down, for commerce, and articles of wearing apparel, or household comfort. Many species are also domesticated, and in a way less precarious, lend their aid to the wants and luxuries of their owners. In the northern parts of America, this extensive family is most bountifully supplied, and her seay lakes and majestic rivers are suitable nurseries for the innumerable multitudes that annually resort to, and reassemble to perform the duties of incubation. In the warmer parts, many remain at all seasons; but it is in what is called Arctic America, and the fur countries, that the prodigious concourse annually arrive, and are so much hunted, both for food and a profitable emolument. Several of the spring months have received appellations from the birds which are most plentiful during them. The expected visitants arrive with remarkable precision, nearly at the same period of the month. They extend over a large space in breadth, and continue flying, without intermission, for many days. The native tribes are prepared by experience, and the signals of their watches, for their appearance, and the first bird, for there are generally a scattered few before, gives notice that the havoc should commence.

"They are," says Dr Richardson, "of great importance in the fur countries, as they furnish, at certain seasons in the year, in many extensive districts, almost the only article of food that can be procured. The arrival of the water-fowl marks the commencement of spring, and diffuses as much joy among the wandering hunters of the Arctic regions, as the harvest or vintage excites in more genial climes. The period of their migration southwards again, in large flocks, at the close of summer, is another season of plenty, bountifully granted to the natives, and fitting them for encountering the rigours and privations of a northern winter."

To the species of *Anatidæ* which were known to Wilson as inhabitants of Northern America, with which his eighth volume has been almost wholly occupied, the researches of later ornithologists and travellers have added considerably, and the following enumeration of them will serve to fill up the list to last discoveries.

Somateria, Leach.

1. *S. spectabilis*, Leach.—King, Eider.—Common to both continents, and

migratory. Numbers of them remain during the summer, and breed in sequestered places in the marsh, or on the sea islands

has much of habits of the common eider. One or two specimens have been killed on the northern shores of Great Britain.

Clangula, Leach.

2. *C. Barrovii*, Swain. and Richard.—Rocky Mountain Garrot. See note to p. 82 of this volume.

Cygnus, Steph.

Wilson, in his list of birds, mentions the “swan;” but from three species at least being natives of the Arctic countries, it is impossible to say whether or not he was aware of any distinctions.

3. *C. musicus*, Bechst., or Wild Swan.—Inhabits the Arctic circle, whence it migrates to both continents.

4. *C. buccinator*, Richardson.—Trumpeter Swan.—Discovered to be undescribed by Dr Richardson during the last overland expedition; distinguished by the bill being entirely black, longer and more depressed than in the common wild swan, the tail containing twenty-four feathers, and by a difference in the folding of the windpipe. The Doctor remarks, it is the most common swan in the interior of the fur countries. It breeds as far south as lat. 61 deg., but principally within the Arctic circle, and in its migrations generally precedes the geese a few days. It is to the trumpeter the bulk of the swan skins imported by the Hudson's Bay Company belong.

5. *C. Bewickii*, Yarrel.—Bewick's Swan.—This bird has lately been discovered as a migratory visitant to Britain. Dr Richardson met with it during the last expedition, and remarks:—“This swan breeds on the sea-coast, within the Arctic circle, and is seen in the interior of the fur countries, in its passage only. It makes its appearance among the latest of the migratory birds in the spring, while the trumpeter swans are, with the exception of the eagles, the earliest.”

Lewis and Clarke, Lawson, and Hearne, were all aware of the difference among the American swans, but they have never, till lately, been really distinguished and characterised.

Anser, Bechst.

6. *A. albifrons*, Bechst. — White-Fronted Goose. — Is mentioned by Bonaparte, and is introduced in the *Northern Zoology*. Its breeding

of the beach. The eggs are eight or ten in number, very nearly resembling those of the domestic duck. Vast numbers, however, regularly migrate farther north on the approach of spring. During their residence here in winter they frequent the marshes, and the various creeks and inlets with which those extensive flats are intersected. Their principal food consists of those minute snail shells so abundant in the marshes. They occasionally visit the sandy beach in search of small bivalves, and, on these occasions, sometimes cover whole acres with their numbers. They roost at night in the shallow ponds, in the middle of the salt marsh, particularly on islands, where many are caught by the foxes. They are extremely shy during the day; and, on the most distant report of a musket, rise from every quarter of the marsh in prodigious numbers, dispersing in every direction. In calm weather they fly high, beyond the reach of shot; but when the wind blows hard, and the gunner conceals himself among the salt grass, in a place over which they usually fly, they are shot down in great numbers; their flight being then low. Geese, brant, and black duck, are the common game of all our gunners along this part of the coast during

places are the woody districts skirting the Mackenzie, to the north of the sixty-seventh parallel, and also the islands of the Arctic Sea.

7. *A. segetum*, Meyer.—Common Bean Goose.—Inhabiting the more Arctic regions. Bonaparte mentions also four additional species as probably accidental inhabitants of the United States and the Arctic countries—*A. cinereus*, Meyer.—*A. rufescens*, Brehm.—*A. medius*, Temm., and *A. cineraceus*, Brehm.

Bernicla, Steph.

8. *B. leucopsis*, (*Anas erythropus*, Linn.—*A. leucopsis*, Temm.)—Inhabiting the Arctic circle, migrating during winter to more temperate regions, and very rare and accidental in the United States.
9. *B. Hutchinsii*, (*Anser Hutchinsii*, Richard.—*Hutchin's Bernacle*, North. Zool. ii. p. 470.)—Described by Dr Richardson as a variety of the brant, in the Appendix to Captain Parry's second volume, and distinguished from it during the last Arctic expedition.—ED.

winter ; but there are at least ten black ducks for one goose or brant, and probably many more. Their voice resembles that of the duck and mallard ; but their flesh is greatly inferior, owing to the nature of their food. They are, however, large, heavy-bodied ducks, and generally esteemed.

I cannot discover that this species is found in any of the remote northern parts of our continent ; and this is probably the cause why it is altogether unknown in Europe. It is abundant from Florida to New England ; but is not enumerated among the birds of Hudson's Bay, or Greenland. Its chief residence is on the sea-coast, though it also makes extensive excursions up the tide waters of our rivers. Like the mallard, they rarely dive for food, but swim and fly with great velocity.

The dusky, or black duck, is two feet in length, and three feet two inches in extent ; the bill is of a dark-greenish ash, formed very much like the mallard, and nearly of the same length ; irides, dark ; upper part of the head, deep dusky brown, intermixed on the fore part with some small streaks of drab ; rest of the head and greater part of the neck, pale yellow ochre, thickly marked with small streaks of blackish brown ; lower part of the neck, and whole lower parts, deep dusky, each feather edged with brownish white, and with fine seams of rusty white ; upper parts the same, but rather deeper ; the outer vanes of nine of the secondaries, bright violet blue, forming the beauty spot, which is bounded on all sides by black ; wings and tails, sooty brown ; tail-feathers, sharp-pointed ; legs and feet, dusky yellow ; lining of the wings, pure white.

The female has more brown on her plumage ; but in other respects differs little from the male, both having the beauty spot on the wing.

MARSH TERN.—*STERNA ARANEA*.—PLATE LXXII. FIG. 6.*Peale's Museum*, No. 3521.*STERNA ARANEA*.—WILSON.**Sterna aranea*, *Bonap. Synop.* p. 354.

THIS new species I first met with on the shores of Cape May, particularly over the salt marshes, and darting down

* The Prince of Musignano writes the following observations in his *Nomenclature* :—

“ A new species of Wilson, referred by Temminck to a bird which he calls *Sterna Anglica*, thinking that it is no other than *S. Anglica* of Montagu. But, as Brehm proves, in his late work, the *S. Anglica* of Temminck is not the *S. Anglica* of Montagu. To the latter he gives the name of *S. risoria*, (which cannot be adopted,) and he calls the former *S. meridionalis*. He does not decide to which of the two species the American *S. aranea* belongs, and expresses the possibility of its being an independent species; but seems inclined to believe it identical with his *S. meridionalis*. Whether this bird is the *S. Anglica*, Mont., the *S. meridionalis*, Brehm, *Anglica*, Temm., or a distinct species peculiar to the north and south of this continent, it shall be the object of these observations to determine. The specimen deposited by Wilson in the Philadelphia Museum (a single glance at which would have enabled us to decide the question) being unfortunately destroyed, and Wilson's figure and description being too unessential to justify any conclusion, we should have been obliged to have left the matter unsettled, had it not been for the successful zeal of Mr Titian Peale, whose practical knowledge (the most important) of North American birds is equalled by none. Their favourite haunts, their note, their flight, are perfectly familiar to him. He succeeded in procuring a fine specimen at Long Beach, N. J., just as we were in want of one, and thus enabled us to give with more security the following opinion, which we had previously formed :—

“ *S. aranea*, Wils., was a nondescript, different from *S. Anglica*, Mont., but the same with *S. Anglica*, Temm., and *S. meridionalis*, Brehm, and therefore common to both continents. Wilson's name having the priority, must be exclusively retained, and Brehm's name of *meridionalis* must be rejected. Thus has our author here also first named and described an European bird.

“ Mr Ord was therefore right in not finding himself authorized to change the name. He was right in believing Montagu's bird distinct; but wrong in thinking Temminck's bird different, though Temminck had positively stated the spe-

after a kind of large black spider, plenty in such places. This spider can travel under water, as well as above, and, during summer at least, seems to constitute the principal food of the present tern. In several which I opened, the stomach was crammed with a mass of these spiders alone; these they frequently pick up from the pools, as well as from the grass, dashing down on them in the manner of their tribe. Their voice is sharper and stronger than that of the common tern; the bill is differently formed, being shorter, more rounded above, and thicker; the tail is also much shorter, and less forked. They do not associate with others, but keep in small parties by themselves.

The marsh tern is fourteen inches in length, and thirty-four cimens he had received from the United States and Brazil differed in nothing from his south Europeans. Even as respects the discrepancy of *S. Anglica*, Mont., his reasons resting upon the slight difference of an unpublished drawing of Wilson respecting measurements of parts, to which Wilson did not attach great importance, were by no means conclusive. In fact, these measurements are incorrect, with the exception of the tarsus, which corresponds within a trifle of the bird. The bill is two and one-eighth inches to the corners of the mouth, and about one and one-half inches to the feathers of the forehead; thus bearing more in favour of Mr Ord's argument, that it is not the *Anglica*, Mont., than he himself supposed; but proving that it is no other than *S. Anglica*, Temm., (*meridionalis*, Brehm,) to which, as above stated, Wilson's name of *aranea* must be exclusively applied.

"The principal character we should assign for a ready distinction between these two closely related species, (in addition to the shorter, thicker, less compressed, and straighter bill, with its edges turned inwards in *Anglica*,) consists in the tarsus, which in *aranea* (owing to its shortness, and the extraordinary length of the nail) is of the same length as the middle toe, including the nail, whilst in *Anglica* it is nearly twice the length, (owing to its superior length, and the shortness of the nail.) The membranes of our bird are also much more scaled. The habits of the two species are very different. The *S. Anglica*, confined to the sea-shores, feeds almost exclusively on strand birds,* and their eggs, sometimes on fishes; whilst the *S. aranea*, generally found on marshes, feeds exclusively on insects."

Bonaparte, and the authors of the *Northern Zoology*, have mentioned the following species as also found in North America:—

1. *S. cyana*, Lath.—Inhabiting the tropical seas of America; common on the coasts of the Southern States.

* Is this correct? Does this tern kill other sea-fowl, and plunder their nests?—Ed.

in extent; bill, thick, much rounded above, and of a glossy blackness; whole upper part of the head and hind neck, black; whole upper part of the body, hoary white; shafts of the quill and tail-feathers, pure white; line from the nostril under the eye, and whole lower parts, pure white; tail, forked, the outer feathers about an inch and three quarters longer than the middle ones; the wings extend upwards of two inches beyond the tail; legs and feet, black; hind toe, small, straight, and pointed.

The female, as to plumage, differs in nothing from the male. The yearling birds, several of which I met with, have the plumage of the crown white at the surface, but dusky below; so that the boundaries of the black, as it will be in the perfect bird, are clearly defined; through the eye a line of black passes down the neck for about an inch, reaching about a quarter of an inch before it; the bill is not so black as in the others; the legs and feet, dull orange, smutted with brown or dusky; tips and edges of the primaries, blackish; shafts, white.

This species breeds in the salt marshes; the female drops her eggs, generally three or four in number, on the dry drift grass, without the slightest appearance of a nest; they are of a greenish olive, spotted with brown.

A specimen of this tern has been deposited in the Museum of this city [Philadelphia.]

2. *S. Arctica*, Temm.—(*North. Zool.* p. 114.) Bonaparte expresses a doubt that this is the true *Arctica* of Temm.; and the description in the *Northern Zoology* points out some discrepancies.

3. *S. stolidus*. Migrates to the North American coasts.

Phaeton, Linn.

These birds, from general appearance, approach near to the terns, (*S. Caspia*;) but from the want of specimens, I am unable to enter into the proper situation of the form, except from the authority of others. Bonaparte places it between *sula* and *plotus*. The only American species is,

1. *P. aethereus*, Linn. tropic bird of Wilson's list. Common during summer on the coasts of the southern states.—ED.

SOOTY TERN.—*STERNA FULIGINOSA*.—PLATE LXXII. FIG. 7.

La hirondelle de mer à grande envergure, *Buff.* viii. p. 345.—Egg-bird, *Forst. Voy.* p. 113.—Noddy, *Damp. Voy.* iii. p. 142. *Arct. Zool.* No. 447. *Lath. Syn.* iii. p. 352.—*Peale's Museum*, No. 3459.

STERNA FULIGINOSA.—LATHAM.

S. fuliginosa, *Bonap. Synop.* p. 355.

THIS bird has been long known to navigators, as its appearance at sea usually indicates the vicinity of land; instances, however, have occurred, in which they have been met with one hundred leagues from shore.* The species is widely dispersed over the various shores of the ocean. They were seen by Dampier in New Holland; are in prodigious numbers in the island of Ascension and in Christmas Island; are said to lay, in December, one egg on the ground; the egg is yellowish, with brown and violet spots.† In passing along the northern shores of Cuba and the coast of Florida and Georgia, in the month of July, I observed this species very numerous and noisy, dashing down headlong after small fish. I shot and dissected several, and found their stomachs uniformly filled with fish. I could perceive little or no difference between the colours of the male and female.

Length of the sooty tern, seventeen inches, extent, three feet six inches; bill, an inch and a half long, sharp pointed and rounded above, the upper mandible serrated slightly near the point; nostril, an oblong slit, colour of the bill, glossy black; irides, dusky; forehead, as far as the eyes, white; whole lower parts and sides of the neck, pure white; rest of the plumage, black; wings, very long and pointed, extending, when shut, nearly to the extremity of the tail, which is greatly

* *Cook, Voyage*, i. p. 275.

† *TURTON*.

forked, and consists of twelve feathers, the two exterior ones four inches longer than those of the middle, the whole of a deep black, except the two outer feathers, which are white, but towards the extremities a little blackish on the inner vanes; legs and webbed feet, black; hind toe, short.

The secondary wing feathers are eight inches shorter than the longest primary.

This bird frequently settles on the rigging of ships at sea, and, in common with another species, *S. stolidus*, is called by sailors the noddy.

CINEREOUS COOT.—FULICA AMERICANA.

PLATE LXXIII. FIG. 1.

Fulica Americana, *Gmel. Syst.* i. p. 704, 23. *Lath. Ind. Orn.* p. 779, 5.—
Cinereous coot, *Gen. Syn.* iii. p. 279.—*Peale's Museum*, No. 4322.

FULICA AMERICANA.—GMELIN.*

Fulica Americana, *Sab. Append. to Capt. Frank. Exp.* p. 690. *Bonap. Synop.*
p. 338.—*Fulica atra*, *Wilson's List*.

THIS species makes its appearance in Pennsylvania about the first of October. Among the muddy flats and islands of

* This description commences the ninth and supplementary volume of the original printed by Mr Ord, after the decease of Wilson, from his notes. The volume was published in 1814, and a second edition appeared in 1825, correcting several mistakes which had occurred in the first. Our present bird was there described as identical with that of Europe, and a detail of the habits of our native species given as belonging to it; these Mr Ord has corrected. The distinctions, I believe, were first pointed out by Mr Sabine, in the Appendix to Captain Franklin's Narrative, and I now add them in that gentleman's words:—

“They are of the same length, though there is a general inferiority in the size of the body, as well as of the legs, head, and bill of the American; the bill is smaller, less thick and strong, and shorter by a quarter of an inch; the callus, independent of the difference in colour in the American bird, extends only half an inch over the head, but in the European, above an inch; the whole head is smaller; the plumage, generally, is similar in colour and character; the outer margin of the first primary feathers of the wing, is more conspicuously marked

the river Delaware, which are periodically overflowed, and which are overgrown with the reed or wild oats, and rushes, the coots are found. They are not numerous, and are seldom seen, except their places of resort be covered with water; in that case they are generally found sitting on the fallen reed, waiting for the ebbing of the tide, which will enable them to feed. Their food consists of various aquatic plants, seeds, insects, and, it is said, small fish. The coot has an aversion to take wing, and can seldom be sprung in its retreat at low water: for, although it walks rather awkwardly, yet it contrives to skulk through the grass and reeds with great speed, the compressed form of its body, like that of the rail genus, being well adapted to the purpose. It swims remarkably well, and, when wounded, will dive like a duck. When closely pursued in the water, it generally takes to the shore, rising with apparent reluctance, like a wounded duck, and fluttering along the surface, with its feet pattering on the water.* It is known in Pennsylvania by the name of the mud-hen.

I have never yet discovered that this species breeds with us; though it is highly probable that some few may occupy the marshes of the interior, in the vicinity of the ponds and lakes, for this purpose: those retired situations being well adapted to the hatching and rearing of their young. In the southern states, particularly South Carolina, they are well known; but the Floridas appear to be their principal rendezvous for the business of incubation. "The coot," says William Bartram,

with white, and there are a few white feathers on the upper edge of the wing; the secondaries in both are tipped with white; the principal difference in the plumage is, that in the American the feathers at the vent are quite black, and the under tail-coverts white; in the European coot, these correspond with the rest of the plumage; the legs are much more slender in the American bird; the tarse of the European measures near two inches and a half, that of the American not quite two inches; the toes are smaller in like proportion; the middle toe, including the claw, of the European coot, is three inches and three quarters long; of the American, three inches and one quarter only."—ED.

* In Carolina, they are called Flusterers, from the noise they make in flying over the surface of the water.—*A Voyage to Carolina*, by JOHN LAWSON, p. 149.

“ is a native of North America, from Pennsylvania to Florida. They inhabit large rivers, fresh water inlets or bays, lagoons, &c., where they swim and feed amongst the reeds and grass of the shores ; particularly in the river St Juan, in East Florida ; where they are found in immense flocks. They are loquacious and noisy, talking to one another night and day ; are constantly on the water, the broad lobated membranes on their toes enabling them to swim and dive like ducks.”*

I observed this species to be numerous, during the winter, in the fresh water ponds situated in the vicinity of the river St Juan, or St John, in East Florida ; but I did not see them in the river. The food which they obtain in these places must be very abundant and nutritious, as the individuals which I shot were excessively fat. One male specimen weighed twenty-four ounces avoirdupois. They associate with the common gallinule (*Gallinula chloropus* ;) but there is not, perhaps, one of the latter for twenty of the former.

The cinereous coot is sixteen inches in length, and twenty-eight in extent ; bill, one and a half inch long, white, the upper mandible slightly notched near the tip, and marked across with a band of chestnut, the lower mandible marked on each side with a squarish spot of the like colour, edged on the lower part with bright yellow or gamboge, thence to the tip, pale horn colour ; membrane of the forehead, dark chestnut brown ; irides, cornelian red ; beneath the eyes, in most specimens, a whitish spot ; the head and neck are of a deep shining black, resembling satin ; back and scapulars, dirty greenish olive ; shoulders, breast, and wing-coverts, slate blue ; the under parts are hoary ; vent, black ; beneath the tail, pure white ; primaries and secondaries, slate, the former tipped with black, the latter with white, which does not appear when the wing is closed ; outer edges of the wings, white ; legs and toes, yellowish green, the scalloped membrane of the latter, lead colour ;

* Letter from Mr Bartram to the author.

middle toe, including the claw, three inches and three quarters long.

The bird from which the foregoing description was taken, was shot in the Delaware, below Philadelphia, the 29th of October, 1813. It was an old male, an uncommonly fine specimen, and weighed twenty-three ounces avoirdupois. It is deposited in Peale's Museum.

The young birds differ somewhat in their plumage, that of the head and neck being of a brownish black; that of the breast and shoulders, pale ash; the throat, grey or mottled; the bill, bluish white; and the membrane on the forehead, considerably smaller.

The young females very much resemble the young males; all the difference which I have been enabled to perceive, is as follows:—breast and shoulders, cinereous; markings on the bill, less; upper parts of the head, in some specimens, mottled; and being less in size.

The lower parts of these birds are clothed with a thick down, and, particularly between the thighs, covered with close fine feathers. The thighs are placed far behind, are fleshy, strong, and bare above the knees.

The gizzard resembles a hen's, and is remarkably large and muscular. That of the bird which has been described was filled with sand, gravel, shells, and the remains of aquatic plants.

Buffon describes the mode of shooting coots in France, particularly in Lorraine, on the great pools of Tiaucourt, and of Indre; hence we are led to suppose, that they are esteemed as an article of food. But with us, who are enabled, by the abundance and variety of game, to indulge in greater luxuries in that season when our coots visit us, they are considered as of no account, and are seldom eaten.

The European ornithologists represent the membrane on the forehead of the *Fulica atra* as white, except in the breeding season, when it is said to change its colour to pale red. In every specimen of the cinereous coot which I have seen, ex-

cept one, the membrane of the forehead was of a dark chestnut brown colour. The one alluded to was a fine adult male, shot in the Delaware, at Philadelphia, on the 11th of May: the membrane was of a pure white; no white marking beneath the eye; legs and feet of a bright grass green.

In Wilson's figure of the coot, accompanying this volume, there are some slight errors; the auriculars are designated, which should not have been done, as they are not distinguishable from the rest of the plumage of the head and neck, which is all of a fine satiny texture; and the outline of the bill is not correct.

Latham states, that the common European coot (*F. atra*) is "met with in Jamaica, Carolina, and other parts of North America." This, I presume, is a mistake, as I have never seen but one species of coot in the United States. Brown, in speaking of the birds of Jamaica, mentions a coot, which, in all probability, is the same as ours. The coot mentioned by Sloane is the common gallinule. So is also that spoken of, in the *Natural History of Barbadoes*, by Hughes, p. 71.

In Lewis and Clark's history of their expedition, mention is made of a bird which is common on the Columbia; is said to be very noisy, to have a sharp, shrill whistle, and to associate in large flocks; it is called the black duck.* This is doubtless a species of coot, but whether or not different from ours cannot be ascertained. How much is it to be regretted, that, in an expedition of discovery, planned and fitted out by an enlightened government, furnished with every means for safety, subsistence, and research, not one naturalist, not one draughtsman, should have been sent, to observe and perpetuate the infinite variety of natural productions, many of which are entirely unknown to the community of science, which that extensive tour must have revealed!

The coot leaves us in November for the southward.

* *History of the Expedition*, vol. ii. p. 194. Under date of November 30th, 1805, they say,—“The hunters brought in a few black ducks of a species common in the United States, living in large flocks and feeding on grass; they are distinguished by a sharp white beak, toes separated, and by having no craw.”

The foregoing was prepared for the press, when the author, in one of his shooting excursions on the Delaware, had the good fortune to kill a full-plumaged female coot. This was on the 20th of April. It was swimming at the edge of a *cripple*, or thicket of alder bushes, busily engaged in picking something from the surface of the water, and, while thus employed, it turned frequently. The membrane on its forehead was very small, and edged on the forepart with gamboge. Its eggs were of the size of partridge shot. And, on the 13th of May, another fine female specimen was presented to him, which agreed with the above, with the exception of the membrane on the forehead being nearly as large and prominent as that of the male. From the circumstance of the eggs of all these birds being very small, it is probable that the coots do not breed until July.

MARTINICO GALLINULE.—GALLINULA MARTINICA.

PLATE LXXIII. FIG. 2.

Gallinula Martinica, *Lath. Ind. Orn.* p. 769, 9; *Gen. Syn.* iii. p. 255, 7. pl. 88.—*Fulica Martinica*, *Linn. Syst.* ed. 12, i. p. 259, 7.—*Fulica Martinicensis*, *Gmel. Syst.* p. 700, 7.—La petite poule-sultane, *Briss. Orn.* v. p. 526, pl. 42, fig. 2; *Buff. Ois.* viii. p. 206.—La favourite de Cayenne, *Pl. Enl.* No. 897, young?—*Peale's Museum*, No. 4294.

GALLINULA? MARTINICA.—LATHAM.*

Gallinula Martinica, *Bonap. Synop.* p. 336.

THIS splendid bird is a native of the southern parts of the continent of North America. I have never learnt that it migrates as far north as Virginia, though it is probable that it may be occasionally seen in that state. It makes its appear-

* This species, in form, runs very much into the *Porphyrio* of Brisson; but without specimens, I cannot decide whether it should rank there, or on the confines of *Gallinula*. The characters of the former group, are the much greater strength of the bill, being almost as high as long, the greater proportional length of legs, and the splendid and metallic lustre of the plumage. In their manners they are partly granivorous, and live more upon land than the water hens.—ED.

ance in the Sea Islands of Georgia, in the latter part of April, and after spending the summer, it departs, with its young, in the autumn. The marshes of Mexico appear to be its winter residence. It frequents the rice fields and fresh water ponds, in company with the common gallinule; but the latter, being of a more hardy nature, remains all winter both in Georgia and Florida.

During its migration, this bird is frequently driven to sea; and I have known two or three instances of its having sought refuge on board of vessels. On the 24th May, 1824, a brig arrived at Philadelphia from New Orleans, bringing a fine living specimen, which had flown on board of her in the Gulf Stream. This bird is now [1825] alive in the Philadelphia Museum. In the month of August, 1818, a storm drove another individual on board of a vessel, in her passage from Savannah to Philadelphia. This also lived for some time in Peale's Museum.

The Martinico gallinule is a vigorous and active bird. It bites hard, and is quite expert in the use of its feet. When it seizes upon any substance with its toes, it requires a considerable effort to disengage it. Its toes are long, and spread greatly. It runs with swiftness; and, when walking, it jerks its tail in the manner of the common rail. Its manners and food are somewhat similar to those of the far-famed purple gallinule, whose history is so beautifully detailed in the works of Buffon.

In its native haunts, it is vigilant and shy; and it is not easy to spring it, without the assistance of a dog.

Length, from the tip of the bill to the end of the tail, fourteen inches; bill, an inch and a quarter long, vermilion, greenish yellow at the tip; irides, pale cornelian; naked crown, dull azure; head, part of the neck, throat, and breast, of a rich violet purple; back and scapulars, olive green; rump, tail, and its coverts, brownish green; sides of the neck, and wings, ultra-marine, the latter tinged with green; shoulders of wings, rich azure; inner webs of the quills and tail-feathers, dusky brown; belly and thighs, dull purplish black; vent, pure white;

tail, rounded; legs and feet, greenish yellow; claws, long, sharp, and of a pale flesh colour; span of the foot, five inches.

BROWN PHALAROPE.—PHALAROPUS LOBATUS.

PLATE LXXIII. FIG. 3.

Tringa lobata, *Linn. Syst.* ed. 10, tom. i. p. 148, 5.—*T. hyperborea*, *Id.* ed. 12, tom. i. p. 249, 9.—*Tringa lobata*, *Gmel. Syst.* i. p. 674, 6.—*T. fusca*, *Id.* p. 675, 33.—*T. hyperborea*, *Id.* No. 9.—*Phalaropus cinereus*, *Briss. Orn.* vi. p. 15.—*P. fuscus*, *Id.* p. 18.—Le Phalarope cendré, *Buff. Ois.* viii. p. 224. *Pl. enl.* 766.—Coot-footed *Tringa*, *Edwards*, pl. 46.—Cock Coot-footed *Tringa*, *Id.* pl. 143.—Red Phalarope, *Penn. Brit. Zool.* No. 219.—Brown Phalarope, *Arct. Zool.* No. 414.—*Phalaropus hyperboreus*, *Lath. Ind. Orn.* p. 775, 1.—*P. fuscus*, *Id.* p. 776, 4.—Red Phalarope, *Gen. Syn.* iii. p. 270, 1. *Id.* p. 272, var. A.—Brown Phalarope, *Id.* p. 274, 4.—Red Phalarope, *Montagu, Orn. Dict. Id. Supp. and Appendix.*—*Phalaropus hyperboreus*, *Temm. Man. d'Orn.* p. 709.—Le Lobipède à hausse-col, *Cuv. Reg. An.* i. p. 495.

LOBIPES WILSONII.—JARDINE.*

Phalaropus (sub-gen. *holopodius*), *Bonap. Synop.* p. 342.—*Phalaropus Wilsonii*, *Sab. App. to Frank. Narrat.* p. 691.—*Lobipes incanus*, *Jard. and Selby, Illust. Ornith.* pl. 25. *Phalaropus Wilsonii*, *North Zool.* ii. pl. 69.

Of this species, only one specimen was ever seen by Wilson, and that was preserved in Trowbridge's Museum, at

* In the small group known as *Phalaropus* we have two forms, distinguished by the stouter make, the flat-formed bill, and the developement of the webs to the toes in the one, and by the slender bill and greater alliance of the other to the *Totani*. The Prince of Musignano has instituted another sub-group from what appears to me to be only the greater developement of the latter form. Following the arrangement of Cuvier, I have retained *Lobipes* for those of slender make, and *Phalaropus* for that of this country, and only one yet discovered.

I have little hesitation in considering the *L. incanus* of ornithological illustrations, to be this bird in imperfect plumage. Bonaparte is of opinion that the American bird was a new species; Mr Ord, that it is some undescribed state of *P. hyperboreus*: with the former of these opinions I agree, and have accordingly adopted the specific name which Sabine had previously chosen for it, but have referred it to the genus *Lobipes* of Cuvier. This plate of our author is one of the very few exceptions where an imperfect representation of the bird is given, the

Albany, in the State of New York. On referring to Wilson's Journal, I found an account of the bird, there called a *Tringa*, written with a lead pencil, but so scrawled and obscured, that parts of the writing were not legible. I wrote to Mr Trowbridge soliciting a particular description, but no answer was returned. However, having had the good fortune, since publishing the first edition, of examining a fine recent specimen of this rare bird, I hope I shall be enabled to fix the species by such characters as will prevent any ornithologist in future from confounding it with the species which follows;—two birds which, owing to a want of precision, were involved in almost inextricable confusion, until Temminck applied himself to the task of disembroiling them; and this ingenious naturalist has fully proved that the seven species of authors, constituted in effect only two species.

Temminck's distinctive characters are drawn from the bill; and he has divided the genus into two sections—an arrangement of which the utility is not evident, seeing that each section contains but one species, unless we may consider that the barred phalarope of Latham constitutes a third, a point not yet ascertained, and not easy to be settled, for the want of characters.

In my examination of these birds, I have paid particular attention to the feet, which possess characters equally striking with those of the bill; hence, a union of all these will afford a facility to the student, of which he will be fully sensible when he makes them the subject of his investigation.

Our figure of this species betrays all the marks of haste; it is inaccurately drawn, and imperfectly coloured; notwith-

figure being much too stout and thick, and not of that more elegant form, one of the *characteristics* of the *Totani*.

Under this division will also range the little red-necked phalarope, *Lobipes hyperboreus* of Temminck, and the present type of the genus. According to Bonaparte, this species is exceedingly rare and accidental in the United States. It will appear in the forthcoming volumes of that gentleman's Illustrations.—ED.

standing, by a diligent study of it, I have been enabled to ascertain that it is the coot-footed tringa of Edwards, plate 46 and 143, to which bird Linnæus gave the specific denomination of *lobata*, as will be seen in the synonymes at the head of this article. In the twelfth edition of the *Systema Naturæ*, the Swedish naturalist, conceiving that he might have been in error, omitted, in his description of the *lobata*, the synonyme of Edward's cock coot-footed tringa, No. 143, and recorded the latter bird under the name of *hyperborea*—a specific appellation, which Temminck and other ornithologists have sanctioned, but which the laws of methodical nomenclature prohibit us from adopting, as, beyond all question, *hyperborea* is only a synonyme of *lobata*, which has the priority, and must stand.

M. Temminck differs from us in the opinion that the *T. lobata* of Gmelin, vol. i. p. 674, is the present species, and refers it to that which follows. But, if this respectable ornithologist will take the trouble to look into the twelfth edition of Linnæus, vol. i. p. 249, No. 8, he will there find two false references, Edwards's No. 308, and Brisson's No. 1, which gave rise to Gmelin's confusion of synonymes, and a consequent confusion in his description, as the essential character in both authors being nearly in the same words, (*rostro subulato, apice inflexo, &c.*) we are at no loss to infer that both descriptions have reference to the same bird; and we are certain that the *lobata* of the twelfth edition of the former, is precisely the same as that of the tenth edition, which cites for authority, Edwards's 46 and 143, as before mentioned.

I shall now give the short description of the bird figured in the plate, as I find it in Wilson's Note Book:—

Bill, black, slender, and one inch and three-eighths in length. In the original, the bill is said to be one inch and three-quarters long. In length, lores, front, crown, hind-head, and thence to the back, very pale ash, nearly white;

from the anterior angle of the eye, a curving stripe of black descends along the neck for an inch or more, thence to the shoulders, dark reddish brown, which also tinges the white on the side of the neck next to it; under parts, white; above, dark olive; wings and legs, black. Size of the turnstone.

The specimen from which the following description was taken, was kindly communicated to me by my friend Mr Titian R. Peale, while it was yet in a recent state, and before it was prepared for the museum. It was this individual which enabled me to ascertain the species figured by Wilson. It was shot in the neighbourhood of Philadelphia, on the 7th of May, 1818.

Bill, narrow, slender, flexible, subulate, of equal width; nostrils, basal, and linear; lobes of the toes, thick, narrow, and but slightly scalloped. Outer toe, connected to the middle one as far as the first joint; inner toe, divided nearly to its base; hind toe, resting on the ground. Bill, black, one inch and three-eighths in length; head above, of an ash grey; hind head, whitish, which colour extends a short distance down the neck; over the eyes, a white stripe, below them, a white spot; throat and lower parts, white; a line of black passes through the eyes, spreads out towards the hind head, and descends along the neck; lower part of the neck, pale ferruginous; back part of the neck, deep ferruginous, which descends on each side, and mingles with the plumage of the back and scapulars, which are of a clove brown, the feathers tipped with whitish; wings and tail, dark clove brown, some of the lesser coverts having a reddish tinge; the upper tail feathers, tinged with red at their tips, the under feathers, marked with white on their inner webs; irides, dark brown; legs and feet, dark plumbeous; claws, long, of a dark horn colour; hind toe, independent of the claw, five sixteenths of an inch long; the tertials, when the wing is closed, extend to within three-eighths of an inch of the tip of the primaries; weight, an ounce and three quarters; length, nine inches and a half; breadth, sixteen inches. This was a female; her eggs very small.

In the grand chain of animated nature, the phalaropes constitute one of the links between the waders and the web-footed tribes, having the form of the sandpipers, with some of the habits of the gulls; the scalloped membranes on their toes enabling them to swim with facility. They are clothed with a thick coat of feathers, beneath which, as in the ducks, lies a mass of down, to protect them from the rigours of the northern climates, of which they are natives. They do not appear to be fond of the neighbourhood of the ocean, and are generally found in the interior, about the lakes, ponds and streams of fresh water, where they delight to linger, swimming near the margin in search of seeds and insects. They are nowhere numerous, are commonly seen in pairs, and are so extremely tame and unsuspicious, that one may approach to within a few feet of them.

The genus *Lobipes* of the Baron Cuvier is founded upon this species; and it must be confessed that its characters are sufficiently distinct from those of the bird which follows, to authorize such a separation; but unless some new species should be discovered, we see no impropriety in associating the two birds already known, taking care, however, to preserve a consistency in the generic characters, which Temminck, in his *Manuel*, has not sufficiently observed.

In the Appendix to Montagu's *Supplement to the Ornithological Dictionary*, we find the following remarks on this species, there named *fulicaria*:—"We have before mentioned, that this bird had been observed in the Orkneys in considerable abundance in the summer, and that no doubts were entertained of its breeding there, although the nest had not been found. To Mr Bullock, therefore, we are indebted for the farther elucidation of the natural history of this elegant little bird. In a letter to the author, this gentleman says, 'I found the red phalarope common in the marshes of Sanda and Westra, in the breeding season, but which it leaves in the autumn. This bird is so extremely tame, that I killed nine without moving out of the same spot, being not in the least alarmed at the re-

port of a gun. It lays four eggs, of the shape of that of a snipe, but much less, of an olive colour, blotched with dusky. It swims with the greatest ease, and, when on the water, looks like a beautiful miniature of a duck, carrying its head close to the back, in the manner of a teal.' Mr Bullock farther observes, 'That the plumage of the female is much lighter, and has less of the rufous than the other sex.' *

GREY PHALAROPE † — PHALAROPUS FULICARIUS.

PLATE LXXIII. FIG. 4.

Tringa fulicaria, *Linn. Syst.* ed. 10, tom. i. p. 148, 6.—*Tringa glacialis*, *Gmel. Syst.* i. p. 675, 2. *T. hyperborea*, var. *B. Id.* p. 676.—*Le Phalarope*, *Briss. Orn.* vi. p. 12, No. 1.—*Phalaropus rufescens*, *Id.* p. 20.—*Phalaropus lobatus*, *Lath. Ind. Orn.* p. 776, 2. *P. glacialis*, *Id.* No. 3.—*Red Phalarope*, fem. *Gen. Syn.* iii. p. 271.—*Grey Phalarope*, *Id.* p. 272, 2.—*Plain Phalarope*, *Id.* p. 273, 3.—*Grey Phalarope*, *Penn. British Zool.* No. 218.—*Arct. Zool.* No. 412.—*Red Phalarope*, *Id.* No. 413.—*Plain Phalarope*, *Id.* 415.—*Red Coot-footed Tringa*, *Edw. pl.* 142.—*Grey Coot-footed Tringa*, *Id. Gleanings*, pl. 308.—*Le Phalarope rouge*, *Buffon, Ois.* viii. p. 225.—*Le Phalarope à festons dentelés*, *Id.* p. 226.—*Grey Phalarope*, *Montagu, Orn. Dict. and Appendix to Supp.*—*Bewick*, ii. p. 132.—*Le Phalarope gris*, *Cuv. Règ. An.* i. p. 492.—*Le Phalarope rouge*, *Id. ibid.*—*Phalaropus platyrhynchus*, *Temm. Man. d'Orn.* p. 712.—*Peale's Museum*, No. 4088.

PHALAROPUS FULICARIUS.—BONAPARTE ‡

Phalaropus hyperborea, *Ord.* 1st. edit. of *Supp.* p. 75.—*Phalaropus fulicarius*, *Bonap. Synop.* p. 341. *Nomenclature*, No. 232.—*Phalaropus lobatus*, *Grey Phalarope*, *Flem. Br. Anim.* p. 100.—*Grey Phalarope*, *Selby, Illust. Br. Ornith.* 2d ed. pl. 28.

BILL pretty stout and wide, slightly compressed at the tip, depressed on the lower half; upper mandible, carinate; nostrils, subovate, a short distance from the base; feet, semipalmate; lobes of the toes, broad and greatly scalloped; hind toe,

* All observations referring to European birds in this description cannot apply. *L. Wilsoni* is yet known only as American. The last may be referred with propriety however to *Lobipes hyperboreus*.—ED.

† Named in the plate, *Red Phalarope*.

‡ This bird is here represented in the change from the summer or breeding state, to that of the grey plumage of its winter dress, in which alternations it

barely touching the ground; bill, reddish orange at the base, the remainder black, an inch long; front and crown, black, barred transversely with lines of white; throat, sides of the neck, and lower parts, white, thickly and irregularly barred with curving dashes of reddish chocolate; upper parts, of a deep cinereous blue, streaked with brownish yellow and black; the back scapulars, broadly edged with brownish yellow; wings and rump, dark cinereous; greater wing-coverts, broadly tipped with white, forming a large band; primaries, nearly black, and crossed with white below their coverts; tail, plain olive, middle of its coverts black, their sides bright brownish yellow; vent, white, those feathers immediately next to the tail, reddish chocolate, legs, black on the outside, yellowish within. Length nine inches, breadth fifteen inches and a half; length of hind toe, independent of the claw, one-eighth of an inch. Male. The inner toe is connected to the middle one by a membrane as far as the first joint, the outer toe much farther; hence the feet may be properly termed semipalmate; webs and lobes, finely pectinated. This conformation of the feet is pretty accurately exhibited in Edwards's plate, No. 308. The grey phalarope is a rare bird in Pennsylvania, and is not often met with in any part of the United States. The individual from which our description was taken, was shot in a pond, in the vicinity of Philadelphia, in the latter part of May, 1812. There were three in company. The person who shot it had never seen one of the species before, and was struck with their

bears a strong resemblance to the knots and godwits, &c. It will show an example of the genus *Phalaropus*, indeed it is the only one hitherto discovered.* The form appears more stout, from the shortness of the legs, and it is also distinguished from *Lobipes* by the flattened or depressed bill, and more than usually fleshy tongue. They are expert swimmers, are often found out at sea, and their whole manners on the water resemble more those of a truly aquatic bird than of a form allied to the *Tringa*. Bonaparte mentions, that this bird is rare and accidental, and during winter only found in the United States extending its migrations to Florida.—Ed.

* Dr Richardson thinks that another species will be found in the plain Phalarope of Pennant, and proposes the name of *P. glacialis* for it.—Ed.

singular manners. He described them as swimming actively near the margin of the pond, dipping in their bill very often, as if feeding, and turning frequently. In consequence of our specimen being in a state of putridity when received, it was preserved with considerable difficulty, and the sex could not be ascertained.

In the spring of the year 1816, my friend, Mr Le Sueur, shot, in Boston Bay, a young individual of this species. Crown, dark slate, tinged with yellowish brown; front, throat, line over the eye, belly, and vent, white; shoulders, breast, and sides, tawny or fawn colour; back, dark slate, paler near the rump, the feathers edged with bright yellow ochre; wings, pale cinereous, some of the lesser coverts edged with white, the greater coverts largely so, forming the bar; primaries and tail, black; the latter edged with yellowish brown, the shafts of the former white; bill and feet, as in the first described.

On the 20th of March, 1818, I shot, in the river St John, in East Florida, an immature female specimen; irides, dark brown; around the base of the bill, a slight marking of dark slate; front and crown, white, mottled with pale ash; at the interior part of each eye, a black spot; beneath the eyes, dark slate, which extends over the auriculars, the hind head, and upper part of the neck; upper parts, cinereous grey, with a few faint streaks of slate; throat, breast, whole lower parts, and under tail-coverts, pure white; flanks, with a few faint ferruginous stains; wings, slate brown, the coverts of the secondaries, and a few of the primary coverts, largely tipped with white, forming the bar as usual; tail, brown, edged with cinereous; legs and feet, pale plumbeous; the webs, and part of the scalloped membranes, yellowish; bill and size as in the first specimen.

The tongue of this species is large, fleshy, and obtuse.

This bird has been described under a variety of names. What could induce that respectable naturalist, M. Temminck, to give it a new appellation, we are totally at a loss to conceive. That his name (*Phalaropus platyrhinus*) is good,—that it is even

better than all the rest, we are willing to admit,—but that he had no right to give it a new name we shall boldly maintain, not only on the score of expediency, but of justice. If the right to change be once conceded, there is no calculating the extent of the confusion in which the whole system of nomenclature will be involved; the study of methodical natural history is sufficiently laborious, and whatever will have a tendency to diminish this labour, ought to meet the cordial support of all those who are interested in the advancement of the natural sciences.

“The study of natural history,” says the present learned president of the Linnæan Society, “is, from the multitude of objects with which it is conversant, necessarily so encumbered with names, that students require every possible assistance to facilitate the attainment of those names, and have a just right to complain of every needless impediment. Nor is it allowable to alter such names, even for the better. In our science, the names established throughout the works of Linnæus are become current coin, nor can they be altered without great inconvenience.”*

That there is a property in names, as well as in things, will not be disputed; and there are few naturalists who would not feel as sensibly a fraud committed on their nomenclature as on their purse. The ardour with which the student pursues his researches, and the solicitude which he manifests in promulgating his discoveries under appropriate appellations, are proofs that at least part of his gratification is derived from the supposed distinction which a name will confer upon him; deprive him of this distinction, and you inflict a wound upon his self-love which will not readily be healed.

To enter into a train of reasoning to prove that he who first describes and names a subject of natural history, agreeable to the laws of systematic classification, is for ever entitled to his name, and that it cannot be superseded without injustice, would

* *An Introduction to Physiological and Systematical Botany*, chap. 12.

be useless, because they are propositions which all naturalists deem self-evident. Then how comes it, whilst we are so tenacious of our own rights, we so often disregard those of others?

I would now come to the point. It will be perceived that I have ventured to restore the long neglected name of *fulicaria*. That I shall be supported in this restoration I have little doubt, when it shall have been made manifest that it was Linnæus himself who first named this species. A reference to the tenth edition of the *Systema Naturæ** will show that the authority for *Tringa fulicaria* is Edwards's red coot-footed tringa, pl. 142, and that alone, for it does not appear that Linnæus had seen the bird. The circumstance of the change of the generic appellation can in nowise affect the specific name; the present improved state of the science requires the former, justice demands that the latter should be preserved. In this work I have preserved it; and I flatter myself that this humble attempt to vindicate the rights of Linnæus will be approved by all those who love the sciences of which he was so illustrious a promoter.

* Of all the editions of the *Systema Naturæ*, the tenth and the twelfth are the most valuable; the former being the first which contains the *synonyma*, and the latter being that which received the finishing hand of its author. In the United States, Linnæus is principally known through two editors: Gmelin, whose thirteenth edition of the *Systema Naturæ* has involved the whole science in almost inextricable confusion; and Turton, whose English translation of Gmelin is a disgrace to science and letters. All writers on zoology and botany should possess Linnæus's tenth and twelfth editions; they will be found to be of indispensable use in tracing synonymes and fixing nomenclature.

WILSON'S PLOVER.—CHARADRIUS WILSONIUS.

PLATE LXXIII. FIG. 5.

Peale's Museum, No. 4159, male.—4160, female.

CHARADRIUS WILSONIUS.—ORD.

Charadrius Wilsonius, *Bonap. Synop.* p. 296.—*Nomenclature*, No. 221.

Of this neat and prettily marked species I can find no account, and have concluded that it has hitherto escaped the eye of the naturalist. The bird from which this description was taken, was shot the 13th of May, 1813, on the shore of Cape Island, New Jersey, by my ever-regretted friend; and I have honoured it with his name.* It was a male, and was accompanied by another of the same sex and a female, all of which were fortunately obtained.

This bird very much resembles the ring plover, except in the length and colour of the bill, its size, and in wanting the yellow eyelids. The males and females of this species differ in their markings, but the ring plovers nearly agree. We conversed with some sportsmen of Cape May, who asserted that they were acquainted with these birds, and that they sometimes made their appearance in flocks of considerable numbers; others had no knowledge of them. That the species is rare we were well convinced, as we had diligently explored the shore of a considerable part of Cape May, in the vicinity of Great Egg Harbour, many times at different seasons, and had never seen them before. How long they remain on our coast, and where they winter, we are unable to say. From the cir-

* Bonaparte thus observes in his *Nomenclature*,—"A very rare species established by the Editor (Mr Ord), and dedicated to Wilson. It is the first homage of the kind paid to the memory of this great and lamented self-taught naturalist. The descriptions of several species in the works of former authors come more or less near to it, but after a careful investigation we are satisfied that it is new."—ED.

cumstance of the oviduct of the female being greatly enlarged, and containing an egg half grown, apparently within a week of being ready for exclusion, we concluded that they breed there. Their favourite places of resort appear to be the dry sand flats on the sea-shore. They utter an agreeable piping note.

This species is seven inches and three quarters in length, and fifteen and a half in extent; the bill is black, stout, and an inch long, the upper mandible projecting considerably over the lower; front, white, passing on each side to the middle of the eye above, and bounded by a band of black of equal breadth; lores, black; eyelids, white; eye, large and dark; from the middle of the eye backwards the stripe of white becomes duller, and extends for half an inch; the crown, hind head, and auriculars, are drab olive; the chin, throat, and sides of the neck, for an inch, pure white, passing quite round the neck, and narrowing to a point behind; the upper breast below is marked with a broad band of jet black; the rest of the lower parts, pure white; upper parts, pale olive drab; along the edges of the auriculars and hind head, the plumage, where it joins the white, is stained with raw terra sienna; all the plumage is darkest in the centre; the tertials are fully longer than the primaries, the latter brownish black, the shafts and edges of some of the middle ones, white; secondaries and greater coverts, slightly tipped with white; the legs are of a pale flesh colour; toes bordered with a narrow edge; claws and ends of the toes, black; the tail is even, a very little longer than the wings, and of a blackish olive colour, with the exception of the two exterior feathers, which are whitish, but generally the two middle ones only are seen.

The female differs in having no black on the forehead, lores, or breast, those parts being pale olive.

DARTER, OR SNAKE-BIRD.*—PLOTUS ANHINGA.

PLATE LXXIV. FIG. 1. MALE.

Plotus anHINGA, *Linn. Syst.* ed. 12. tom. i. p. 218. *Gmel. Syst.* i. p. 580, 1. *Ind. Orn.* p. 895, 1.—*Plotus melanogaster*, *Id.* p. 896, var. B, var. C.—*AnHINGA Brasiliensis Tupinamb.* *Marcgrav. Hist. Nat. Bras.* p. 218.—*L'AnHINGA*, *Briss.* vi. p. 476. *Salerne*, p. 375. *Buff. Ois.* viii. p. 448.—*AnHINGA noir de Cayenne*, *Pl. Enl.* 960.—*White-bellied darter*, *Lath. Gen. Syn.* iii. p. 622, 1.—*Black-bellied darter*, *Id.* p. 624, var. A, pl. 106. *Id.* p. 625, var. B.—*Colymbus colubrinus*, snake-bird, *Bartram*, p. 132, 295.—*Peale's Museum*, No. 3188; male.

PLOTUS ANHINGA.—LINNÆUS.†

Plotus anHINGA, *Bonap. Synop.* p. 411.—*Plotus melanogaster*, *Ord.* 1st edit. of *Supp.* p. 79.

HEAD, neck, whole body, above and below, of a deep shining black, with a green gloss, the plumage extremely soft

* Named in the plate, black-bellied darter.

† This very curious genus contains only two known species;—that of our author, common to both continents of America, and the *Plotus Vaillantii* of Temminck, a native of India, Africa, and the South Seas. It has been placed among the *Pelicanidae* by most ornithologists; but how far all the forms which are at present included in that family have a right to be there, I am not at present prepared to determine: if they are, that of *Plotus* will hold a very intermediate rank, particularly in habits, which may lead to some discoveries in the relations to each other. The economy is in a considerable measure arboreal, and in their own family, as now constituted, they show the greatest development of the power of diving, and activity in the water. They show also the extreme structure in the power of darting and suddenly again withdrawing their head. The cormorants and herons possess this power to great extent, and they all possess a peculiar bend of the neck, observed in certain circumstances of the bird's economy, and into which that part at once puts itself when the bird is dead. This is produced chiefly by the action of two muscles; the one inserted within the cavity of the breast, and running up with a long tendon to the vertebre beneath the bend; the other inserted in the joint above the bend, and running far down with another slender tendon. The action of these two powers, resisted by the muscles on the back part, produce the peculiar angular

and agreeable to the touch; the commencement of the back is ornamented with small, oblong, ashy white spots, which pass

bend, and enable the head to be thrown forward with great force. The effect may be easily seen, and produced, by a jointed stick having cords affixed, and acted on in this way. We may here introduce the genera *Pelicanus*, *Phalacrocorax*, *Tachypetes*, *Sula*, and *Heliornis*, with a short notice of the species of America, as pointed out by the ornithologists who have described the productions of that country.

Pelicanus, Linn.

1. *P. onocrotalus*.—White Pelican.—According to Bonaparte, rare and accidental on the coasts of the Middle States, and said by Dr Richardson to be numerous in the interior of the fur countries, up to the 61st deg. parallel.
2. *P. fuscus*, Linnaeus.—Brown Pelican.—Common in the Southern States, where it breeds.

Phalacrocorax, Briss.

The species of this genus amount to a considerable number, and are distributed over the known world, but there yet exists confusion among them, from the near alliance of many to each other. The Prince of Musignano seems to have taken the authority of Dumont for the species he enumerates. They are as follow :—

1. *P. carbo*.—Cormorant of Wilson's list.—Tail of fourteen feathers; rare and migratory in the United States.
2. *P. graculus*.—Tail, twelve feathers; not uncommon in spring and autumn in the Middle States; very common in Florida, where it breeds; though very abundant in the Arctic and Antarctic circles.
3. *P. cristatus*.—Rather rare, and found during winter only in the United States.
4. *P. pygmaeus*.—Inhabiting the north of both continents.
5. *P. africanus*.—Inhabiting Africa and America; not found in Europe.

The Prince of Musignano is doubtful whether the two last are entitled to any place in the ornithology of America, the specimens which he has seen of both being only reported to have been killed in that country. He mentions also another inhabiting the United States, which he has not examined, but thinks may turn out *P. Brazilianus*.

The first four species are common to Europe and America; the three first are also British. In addition to these, Mr Swainson has described another in the *Northern Zoology*, under the title *dilophus*, or double-crested cormorant, which he cannot reconcile to any of these already described. His characters are :—“ Tail of twelve feathers; bill, three inches and a half long; a crested tuft of feathers behind each eye.”

Tachypetes, Vieill.

1. *T. aquilus*, Vieill.—Not uncommon during summer on the coasts of the United States, as far south as Carolina.

down the shoulders, increasing in size according to the size of the feathers, and running down the scapulars; wings and tail of a shining black, the latter broadly tipped with dirty white; the lesser coverts are glossed with green, and are spotted with ashy white; the last row of the lesser coverts, and the coverts of the secondaries, are chiefly ashy white, which forms a large bar across the wing; the outer web of the large scapulars is crimped; tail, rounded, the two under feathers the shortest, the two upper feathers, for the greater part of their length, beautifully crimped on their outer webs, the two next feathers in a slight degree so; bill, dusky at the base and above; the upper mandible brownish yellow at the sides, the lower mandible yellow ochre; inside of the mouth, dusky; irides, dark crimson; the orbit of the eye, next to the plumage of the head, is of a greenish blue colour, this passes round, in the form of a zigzag band, across the front,—the next colour is black, which entirely surrounds the eye; eyelids, of a bright azure, running into violet next the eyeball; lores, greenish blue; naked skin in front black; jugular pouch, jet black; hind head subcrested; along the sides of the neck there runs a line of loose unwebbed feathers of a dingy ash colour, resembling the plumage of callow young; here and there, on the upper part of the neck, one perceives a feather of the same; on the fore-

Sula, Briss.

1. *Sula Bassana*, Briss.—Common during summer over the coasts of the United States, especially the southern.
2. *L. fusca*, Briss.—Booby.—Common in summer on the coasts of the Southern States.

Heliornis, Bonat.

1. *H. Surinamensis*, Surinam *Heliornis*.—An accidental visitant in summer in the Middle States.

I have introduced *Heliornis* here, but without at all placing it in this station from my own opinion of its real place; the form of the birds contained in it (amounting yet to only two species), is very curious, and though showing the form of the body, and, according to Bonaparte, of the skeleton of *Plotus*, yet the habits are much more that of the *Grebes*. This agrees with the arrangement by the Prince of Musignano in one range, but I do not so easily see its connexion in the opposite direction with *Phaeton* and *Sula*, the immediately preceding genera.—ED.

head there is a small knob or protuberance ; the neck, near its centre, takes a singular bend, in order to enable the bird to dart forward its bill with velocity when it takes its prey ; legs and feet of a yellowish clay colour, the toes, and the hind part of the legs, with a dash of dusky ; claws greatly falcated ; when the wings are closed they extend to the centre of the tail.

Length, from the tip of the bill to the end of the tail, two feet ten inches,* breadth three feet ten inches ; bill to the angle of the mouth, full four inches ; tail, ten inches and a half, composed of twelve broad and stiff feathers ; weight, three pounds and a half.

The serratures of the bill are extremely sharp, so much so, that when one applies tow, or such like substance, to the bird's mouth, it is with difficulty disengaged.

The lower mandible and throat, as in the divers, are capable of great expansion to facilitate the swallowing of fish, which constitute the food of this species. The position of these birds, when standing, is like that of the gannets.

The above description was taken from a fine adult male specimen, which was shot by my fellow-traveller, Mr T. Peale, on the 1st of March, 1818, in a creek below the Cow Ford, situated on the river St John, in East Florida. We saw some others in the vicinity, but, owing to their extreme vigilance and shyness, we could not procure them.

From the description of the white-bellied darter of Latham and others, which is unquestionably this species, one would be inclined to conjecture, that the bird figured as the female is the young male. But this point it is not in my power to ascertain. All the darters which I saw, while in Florida, were males.

The snake-bird is an inhabitant of the Carolinas, Georgia,

* The admeasurement of the specimen described in the first edition of the ninth volume, was made by Wilson himself from the stuffed bird in Peale's museum. It differs considerably from that described above ; but as our specimen was a very fine one, there is room to conjecture that there was some error in the admeasurement of the former, ours being described immediately after death.

the Floridas, and Louisiana, and is common in Cayenne and Brazil. It seems to have derived its name from the singular form of its head and neck, which at a distance might be mistaken for a serpent. In those countries where noxious animals abound, we may readily conceive that the appearance of this bird, extending its slender neck through the foliage of a tree, would tend to startle the wary traveller, whose imagination had portrayed objects of danger lurking in every thicket. Its habits, too, while in the water, have not a little contributed to its name. It generally swims with its body immersed, especially when apprehensive of danger, its long neck extended above the surface, and vibrating in a peculiar manner. The first individual that I saw in Florida was sneaking away, to avoid me, along the shore of a reedy marsh, which was lined with alligators, and the first impression on my mind was that I beheld a snake, but the recollection of the habits of the bird soon undeceived me. On approaching it, it gradually sank, and my next view of it was at many fathoms distance, its head merely out of the water. To pursue these birds at such times is useless, as they cannot be induced to rise, or even expose their bodies.

Wherever the limbs of a tree project over, and dip into the water, there the darters are sure to be found, these situations being convenient resting-places for the purpose of sunning and preening themselves, and, probably, giving them a better opportunity than when swimming of observing their finny prey. They crawl from the water upon the limbs, and fix themselves in an upright position, which they maintain in the utmost silence. If there be foliage, or the long moss, they secrete themselves in it in such a manner that they cannot be perceived, unless one be close to them. When approached, they drop into the water with such surprising skill, that one is astonished how so large a body can plunge with so little noise, the agitation of the water being apparently not greater than that occasioned by the gliding of an eel.

Formerly the darter was considered by voyagers as an ano-

malous production, a monster partaking of the nature of the snake and the duck; and, in some ancient charts which I have seen, it is delineated in all the extravagance of fiction.

From Mr William Bartram we have received the following account of the subject of our history:—

“ Here is in this river,* and in the waters all over Florida, a very curious and handsome bird,—the people call them snake-birds; I think I have seen paintings of them on the Chinese screens and other Indian pictures; they seem to be a species of *Colymbus*, but far more beautiful and delicately formed than any other that I have ever seen. They delight to sit in little peaceable communities, on the dry limbs of trees, hanging over the still waters, with their wings and tails expanded, I suppose to cool and air themselves, when at the same time they behold their images in the watery mirror. At such times, when we approach them, they drop off the limbs into the water, as if dead, and for a minute or two are not to be seen; when on a sudden, at a great distance, their long slender head and neck appear, like a snake rising erect out of the water; and no other part of them is to be seen when swimming, except sometimes the tip end of their tail. In the heat of the day they are seen in great numbers, sailing very high in the air over lakes and rivers.

“ I doubt not but if this bird had been an inhabitant of the Tiber in Ovid’s days, it would have furnished him with a subject for some beautiful and entertaining metamorphoses. I believe they feed entirely on fish, for their flesh smells and tastes intolerably strong of it: it is scarcely to be eaten, unless one is constrained by insufferable hunger. They inhabit the waters of Cape Fear River, and, southerly, East and West Florida.”†

* The river St Juan, East Florida.

† BARTRAM’S *Travels*, p. 132.—MS. in the possession of the author [Mr Ord.]

FEMALE DARTER, OR SNAKE-BIRD.*—PLATE LXXIV. FIG. 2.

Anhinga de Cayenne, *Pl. Enl.* 959.—*Peale's Museum*, No. 3189, female.

PLOTUS ANHINGA.—LINNÆUS.

THE female darter measures three feet five inches in length, and differs in having the neck before of a roan colour, or iron grey, the breast the same, but lighter, and tinged with pale chestnut; the belly as in the male; where the iron grey joins the black on the belly there is a narrow band of chestnut; upper head and back of the neck, dark sooty brown, streaked with blackish; cheeks and chin, pale yellow ochre; in every other respect the same as the male, except in having only a few slight tufts of hair along the side of the neck; the tail is twelve inches long to its insertion, generally spread out like a fan, and crimped like the other on the outer vanes of the middle feathers only.

The above is a description of the supposed female darter, which is preserved in Peale's museum.

The author having written to Mr John Abbott of Georgia, relative to this species, and some others, received from this distinguished naturalist a valuable communication, from which the following extract is made:—"Both the darters I esteem as but one species. I have now by me a drawing of the male, or black-bellied, only, but have had specimens of both at the same time. I remember that the upper parts of the female were similar to those of the male, except that the colour and markings were not so pure and distinct; length, thirty-six inches, extent, forty-six. These birds frequent the ponds, rivers, and creeks, during the summer; build in the trees of the swamps, and those of the islands in the ponds; they con-

* This article was written by Mr Ord.

struct their nests of sticks; eggs of a sky blue colour. I inspected a nest, which was not very large; it contained two eggs and six young ones, the latter varying much in size; they will occupy the same tree for a series of years. They commonly sit on a stump, which rises out of the water, in the mornings of the spring, and spread their wings to the sun, from which circumstance they have obtained the appellation of sun birds. They are difficult to be shot when swimming, in consequence of only their heads being above the water."

Never having seen a specimen of the black-bellied darter of Senegal and Java, I cannot give an opinion touching its identity with ours.

GREAT NORTHERN DIVER, OR LOON.—COLYMBUS
GLACIALIS.—PLATE LXXIV. FIG. 3.*

Colymbus glacialis, *Linn. Syst.* ed. 12, tom. i. p. 221, 5.—*C. immer*, *Id.* p. 222, No. 6. *Ind. Orn.* p. 799, 1.—*C. immer*, *Id.* p. 800, 2.—Le grand Plongeon, *Briss.* vi. p. 105, pl. 10, fig. 1.—Le grand Plongeon tacheté, *Id.* p. 120, pl. 11, fig. 2.—Le grand Plongeon, *Buff. Ois.* viii. p. 251.—L'Imbrim, ou grand Plongeon de la mer du nord, *Id.* p. 258, tab. 22. *Pl. Enl.* 952.—Northern Diver, *Lath. Gen. Syn.* iii. p. 337.—Imber Diver, *Id.* p. 340. *Penn. Brit. Zool.* No. 237, 238. *Arct. Zool.* No. 439, 440. *Bewick*, ii. p. 168, 170. *Montagu, Orn. Dict. Supp. App.* *Low, Fauna Orcadensis*, p. 108, 110.—Plongeon Imbrim, *Temm. Man. d'Orn.* p. 910. *Peale's Museum*, No. 3262, male and young; 3263, female.

COLYMBUS GLACIALIS.—LINNEUS,†

Colymbus glacialis, *Bonap. Synop.* p. 420. *Flem. Brit. Anim.* p. 132. *North. Zool.* ii. p. 474.

THIS bird in Pennsylvania is migratory. In the autumn it

* This article is by Mr Ord.

† The genus *Colymbus*, or the loons, have been restricted to those large divers, of which our present species will point out a good example. They are all birds of a large size, truly aquatic, are seldom on land except during incubation, and though endowed with a considerable power, seldom fly, unless very much pressed by necessity. The great northern diver is very frequent in the Frith of Forth,

makes its appearance with the various feathered tribes that frequent our waters; and, when the streams are obstructed

and there I have never been able either to make up with, or cause one to fly from the sea. I have pursued this bird in a Newhaven fishing-boat, with four sturdy rowers, and, notwithstanding it was kept almost constantly under water, by firing as soon as it appeared, the boat could not succeed in making one yard upon it. They are sometimes caught in the herring-nets, and at set lines, when diving.

The loons and guillemots approach very near in their characters, except in lesser size, and a particular modification of habit in the one preferring the sea-shores, or the reedy banks of inland lakes, for breeding-places, while the others are gregarious, and choose the most precipitous cliffs on the sea, and deposit their eggs, without the least preparation, on the bare rock. The construction of the feet and tarse at once points out in the large birds their great facility of diving, and rapid progression under water, the proportional expanse of web is much greater, and the form of it runs into that of *Phalacrocorax* and *Sula*; the legs are placed very far back, and the muscles possess very great power; the tarsus is flattened laterally, and thus presents a small surface of resistance, and the whole plumage of the bird is close and rigid, presenting a smooth and almost solid resistance in passing through the water. The adults require at least the first season to attain maturity. Dr Richardson mentions the following method of shooting them during the winter:—"They arrive in that season when the ice of the lakes continues entire, except, perhaps, a small basin of open water where a rivulet happens to flow in, or where the discharge of the lake takes place. When the birds are observed to alight in these places, the hunter runs to the margin of the ice, they instantly dive, but are obliged, after a time, to come to the surface to breathe, when he has an opportunity of shooting them. In this way upwards of twenty were killed at Fort Enterprise, in the spring of 1821, in a piece of water only a few yards square."

The present species is the only one described in Wilson's volumes as a native of America. Bonaparte mentions two others, which are also described in the *Northern Zoology*,—the black-throated diver, *Colymbus arcticus*, common in Arctic America, but rare, and only found during winter, in the Middle States, and *Colymbus septentrionalis*, red-throated diver; all are common also to Europe and Great Britain.

The vast lakes and rivers of America, and her interminable swamps, would seem proper nurseries for another family, the grebes; and their recluse, yet active aquatic manners, must either have yet prevented the discovery of more species, or this form is comparatively wanting to that division of the world. Two species only are mentioned in Wilson's History, and Bonaparte adds other two. They are as follows, from that gentleman's *Synopsis*:—

Podiceps.

- I. *P. cristatus*, LATH.—Crested grebe of Wilson's List; rare in the Middle States, and only during winter common in the interior and on the lakes.

with ice, it departs for the Southern States.* In the months of March and April it is again seen, and, after lingering awhile, it leaves us for the purpose of breeding. The loons are found along the coast as well as in the interior; but in the summer they retire to the fresh water lakes and ponds. We have never heard that they breed in Pennsylvania, but it is said they do in Missibisci pond, near Boston, Massachusetts. The female lays two large brownish eggs. They are commonly seen in pairs, and procure their food, which is fish, in the deepest water of our rivers, diving after it, and continuing under for a length of time. Being a wary bird, it is seldom they are killed, eluding their pursuers by their astonishing faculty of diving. They seem averse from flying, and are but seldom seen on the wing. They are never eaten.

The loon is restless before a storm; and an experienced master of a coasting vessel informed me, that he always knew when a tempest was approaching by the cry of this bird, which is very shrill, and may be heard at the distance of a mile or more. The correctness of this observation I have myself since experienced in a winter voyage on the southern coasts of the United States.

This species seldom visits the shores of Britain, except in very severe winters; but it is met with in the north of Europe, and spreads along the Arctic coast as far as the mouth of the river Ob, in the dominions of Russia. It is found about Spitzbergen, Iceland, and Hudson's Bay. Makes its nest, in the more northern regions, on the little isles of fresh water lakes: every pair keep a lake to themselves. It sees well, flies very high, and, darting obliquely, falls secure into its nest. Appears in Greenland in April or the beginning of May, and

2. *P. rubricollis*, LATH.—Rare, and during winter only in the Middle States; very common in Arctic America.

3. *P. cornutus*, LATH.—Common during winter, the young especially, in the Middle States.

4. *P. Carolinensis*, LATH.—Little grebe, of Wilson's List; inhabits the whole continent of America, not extending far to the north. Common from Canada to Louisiana, migrating in the Middle States.—ED.

* The loon is said to winter in the Chesapeake Bay.

goes away in September or October, on the first fall of snow.* It is also found at Nootka Sound† and Kamtschatka.

The Barabinsians, a nation situated between the river Ob and the Irtisch, in the Russian dominions, tan the breasts of this and other water-fowl, whose skins they prepare in such a manner as to preserve the down upon them, and, sewing a number of these together, they sell them to make pelisses, caps, &c. Garments made of these are very warm, never imbibing the least moisture, and are more lasting than could be imagined.‡

The natives of Greenland use the skins for clothing, and the Indians about Hudson's Bay adorn their heads with circlets of their feathers.§

Lewis and Clark's party, at the mouth of the Columbia, saw robes made of the skins of loons,|| and abundance of these birds during the time that they wintered at Fort Clatsop, on that river.¶

The Laplanders, according to Regnard, cover their heads with a cap made of the skin of a loon, (loon,) which word signifies, in their language, lame, because the bird cannot walk well. They place it on their head in such a manner, that the bird's head falls over their brow, and its wings cover their ears.

"Northern divers," says Hearne, "though common in Hudson's Bay, are by no means plentiful; they are seldom found near the coast, but more frequently in fresh water lakes, and usually in pairs. They build their nests at the edge of small islands, or the margins of lakes or ponds; they lay only two eggs, and it is very common to find only one pair and their young in one sheet of water; a great proof of their aversion to society. They are known in Hudson's Bay by the name of loons."**

The great northern diver measures two feet ten inches from

* PENNANT.

† COOK'S *Last Voyage*, ii. p. 237, Am. ed.

‡ LATHAM.

§ *Arctic Zoology*.

|| GASS'S *Journal*.

¶ *History of the Expedition*, vol. ii. p. 189.

** HEARNE'S *Journey*, p. 429, quarto.

the tip of the bill to the end of the tail, and four feet six inches in breadth; the bill is strong, of a glossy black, and four inches and three quarters long to the corner of the mouth; the edges of the bill do not fit exactly into each other, and are ragged, the lower mandible separates into two branches, which are united by a thin elastic membrane, and are easily movable horizontally, or receding from each other, so as to form a wider gap to facilitate the swallowing of large fish; tongue, bifid; irides, dark blood red; the head and half of the length of the neck, are of a deep black with a green gloss, and purple reflections; this is succeeded by a band consisting of interrupted white and black lateral stripes, which encompasses the neck, and tapers to a point on its fore part, without joining,—this band measures about an inch and a half in its widest part, and, to appearance, is not continuous on the back part of the neck, being concealed by some thick, overhanging, black feathers, but, on separating the latter, the band becomes visible: the feathers which form these narrow stripes, are white, streaked down their centre with black, and, what is a remarkable peculiarity, their webs project above the common surface; below this, a broad band of dark glossy green and violet, which is blended behind with the plumage of the back; the lower part of the neck, and the sides of the breast, are ribbed in the same manner as the band above; below the chin, a few stripes of the same; the whole of the upper parts are of a deep black, slightly glossed with green, and thickly spotted with white, in regular transverse or semicircular rows, two spots on the end of each feather—those on the upper part of the back, shoulders, rump, and tail-coverts, small and roundish, those on the centre of the back, square and larger; those on the scapulars are the largest, and of an oblong square shape; the wing-feathers and tail are plain brown black, the latter composed of twenty feathers; the lower parts are pure white, a slight dusky line across the vent; the scapulars descend over the wing when closed, and the belly feathers ascend so as to meet them, by which means every part of the wing is concealed,

except towards the tip; the outside of the legs and feet is black, inside, lead colour; the leg is four inches in length, and the foot measures, along the exterior toe to the tip of its claw, four inches and three quarters; both legs and feet are marked with five-sided polygons; weight of the specimen described, eight pounds and a half.

The female diver is somewhat less than the male; the bill is yellowish; crown, back part of the neck, and whole upper parts, pale brown; the plumage of part of the back and scapulars is tipped with pale ash; the throat, lower side of the neck, and whole under parts, are white, but not so pure as that of the male, having a yellowish tinge; the quill feathers, dark brown. She has no appearance of bands on her neck, or of spots on her body.

The young males do not obtain their perfect plumage until the second or third year. One which we saw, and which was conjectured to be a yearling, had some resemblance to the female, with the exception of its upper parts being of a darker and purer brown, or mouse colour, and its under parts of a more delicate white; it had likewise a few spots on the back and scapulars; but none of those markings on the neck which distinguish the full-grown male.

The conformation of the ribs and bones of this species is remarkable, and merits particular examination.

In the account which some of the European ornithologists give of their northern diver, we presume there is an inaccuracy. They say it measures three feet six inches in length, and four feet eight in breadth, and weighs sixteen pounds. If this be a correct statement, it would lead to the surmise that our diver is a different species; for, of several specimens which we examined, the best and largest has been described for this work; the admeasurement of which bird comes considerably short of that of the European mentioned above. The weight, as has been stated, was eight pounds and a half.

According to Temminck, the adult male and female are alike in plumage. All the females which have passed under

my examination, differed from the old males ; and it is the universal opinion among our sportsmen who reside on the coast, where the loons are common, that the adults of both sexes may always be distinguished by their garb. However, in confirmation of Temminck's opinion, I can adduce the authority of the Prince of Musignano, Charles Lucian Bonaparte, who has informed me, that he has in his collection a female which was shot in the Delaware, and which differs in no respect from the adult male.

On a re-examination of the *Supplement to the Ornithological Dictionary* of Montagu, I find upon this subject the following remarks, which should seem to put the question at rest respecting the identity of the European and American species :—" It should appear that the size of this species has been commonly exaggerated, or they must vary very materially, since those which have come under our examination did not exceed ten pounds ; and an old, or matured male, measured only two feet eight inches. A young female, before the plumage was perfected, weighed eight pounds six ounces, and measured two feet seven inches in length.

" A northern diver, taken alive, was kept in a pond for some months, which gave us an opportunity of attending to its manners. In a few days, it became extremely docile, would come at the call from one side of the pond to the other, and would take food from the hand. The bird had received an injury in the head, which had deprived one eye of its sight, and the other was a little impaired ; but, notwithstanding, it could, by incessantly diving, discover all the fish that was thrown into the pond. In defect of fish, it would eat flesh.

" It is observable, that the legs of this bird are so constructed and situated as to render it incapable of walking upon them. This is probably the case with all the divers, as well as the grebes.

" When this bird quitted the water, it shoved its body along upon the ground, like a seal, by jerks, rubbing the breast against the ground, and it returned again to the water in a similar manner. In swimming and diving, only the legs are

used, and not the wings, as in the guillemot and auk tribes, and by their situation so far behind, and their little deviation from the line of the body, the bird is enabled to propel itself in the water with great velocity, in a straight line, as well as turn with astonishing quickness."

LAUGHING GULL.*—*LARUS ATRICILLA*.

PLATE LXXIV. FIG. 4.

Larus atricilla, *Linn. Syst.* ed. 10, tom. i. p. 136, 5. *Gmel. Syst.* i. p. 600, 8. *Ind. Orn.* p. 813, 4.—Laughing gull, *Catesby*, i. pl. 89. *Lath. Gen. Syn.* iii. p. 383, 12.—*Arct. Zool.* No. 454.—La mouette rieuse, *Briss.* vi. p. 192, 13, pl. 18, fig. 1.—Mouette à capuchon plombé, *Temm. Man. d'Orn.* p. 779. *Peale's Museum*, No. 3881.

LARUS ATRICILLA.—LINNÆUS.†

Larus ridibundus, *Ord.* 1 edit. of *Supp.* p. 89.—*Larus atricilla*, *Bonap. Synop.* p. 359.

LENGTH, seventeen inches; extent, three feet six inches; bill, thighs, legs, feet, sides of the mouth, and eyelids, dark

* Named in the plate, black-headed gull.

† This gull is the only one figured by Wilson, though several are mentioned in his list, and, no doubt, had he survived to complete his great undertaking, many others would have been both added and figured. I have introduced a short description of those which have been since noticed by writers on Arctic and Northern zoology, but any observations will be confined, for the present, to the form now before us, perhaps more familiar in the black-headed gull of Britain.

The gulls are distributed over the whole world, and present various forms. They are mostly, however, of graceful appearance, and perform their motions with ease and lightness; their plumage is often of snowy whiteness, or tinged with a pale blush, adding to its delicacy. By the poets they are employed as emblems of purity, when riding buoyantly on the waves, and weaving a sportive dance, or as accessories to the horrors of a storm, by their shrieks and wild piercing cries. In their manners they are the vultures of the ocean, feed indiscriminately on fish, or on carrion, and frequently attack birds of inferior power. A dead horse, newly cast upon the beach, will present a picture little inferior to that drawn by Audubon of the American vultures, on the discovery of some putrid carcass.

blood red; inside of the mouth, vermilion; bill, nearly two inches and a half long; the nostril is placed rather low; the

Our present bird will rank under the genus *Xema* of Boje, which will contain those of swallow-like form, apparently both a natural and well-defined group. They are not so truly pelagic as many of the other forms—ascend the course of rivers in search of food, and breed by the inland lochs or marshes—are extremely clamorous and intrepid in defence of their young, but during winter are one of the most shy and wary. They undergo an annual change of plumage during the breeding season, obtaining the whole or part of the head of a dark and decided colour from the rest of the body, generally shades of deep and rich brown, or grey; in winter this entirely disappears, and is succeeded by pure white, except on the auriculars, which retain a trace of the darker shade. They feed on fish and insects, and some follow the plough in search of what it may turn up. In fishing, they exhibit occasionally the same manner of seizing their prey as the terns, hovering above, and striking it under water with the wings closed.

The species which are noticed by the Prince of Musignano, and the authors of the *Northern Zoology*, as inhabiting North America, are,—

1. *L. Sabinii*, (*Xema Sabinii*, Leach.)—Discovered by Captain Edward Sabine, breeding in company with the Arctic tern, on the west coast of Greenland; they seem confined to high latitudes.
2. *Larus minutus*, Pall.—Inhabiting the North, but seldom seen in the United States.
3. *Larus capistratus*, Temm.—Inhabiting the North, and not very rare during autumn on the Delaware and Chesapeake, and found as far inland as Trenton. These will all rank in *Xema*, and Swainson and Richardson have described two under the titles of *L. Franklinii* and *L. Bonapartii*. These gentlemen seem to think that the American *L. atricilla* is confounded with Temminck's *atricilla*, and that they embrace two species. I have added the descriptions from Dr Richardson and Mr Swainson's notes, in their own words. I have no means at present of deciding this point.
4. *L. Franklinii*, Swain. and Richard.—Franklin's rosy gull, with vermilion bill and feet; mantle, pearl grey; five exterior quills broadly barred with black, the first one tipped with white for an inch; tarsus, twenty lines long; hood, black in summer.

"This is a very common gull in the interior of the fur countries, where it frequents the shores of the larger lakes. It is generally seen in flocks, and is very noisy. It breeds in marshy places. Ord's description of his black-headed gull, (Wilson, vol. ix. p. 89—present edition, vol. iii. p. 216,) corresponds with our specimens, except that the conspicuous white end of the first quill is not noticed: the figure (pl. 74, fig. 4,) differs in the primaries being entirely black.* The Prince of Musignano gives the totally black primaries, and a tarsus nearly two inches long, as part of the specific character of his *L. atricilla*, to which he refers Wilson's bird; though, in his *Observations*, he states, that the adult specimens have the primaries, with the exception of the first and second, tipped with white. *L. Franklinii* cannot be referred either to the *L. atricilla* or *L. melanocephalus* of M. Temminck: the first has a lead-coloured hood, and deep black quill feathers, untipped by white; and the black hood of the second does not descend lower on the throat than on the nape; its quill feathers

* "Four American specimens of *L. atricilla* are now before me. It is a larger, and a totally different species. The three outer quills are wholly black; the fourth tipped for about one inch, and the fifth for half an inch, with black; the extreme white spot at the point of the five first quills is very small in some, and not seen in adult specimens, having these feathers worn."—Sw.

eyes are black; above and below each eye there is a spot of white; the head and part of the neck are black, remainder of

are also differently marked, and its tarsus is longer. His *L. ridibundus* and *capistratus* have brown heads, and the interior of the wings grey; the latter has also a much smaller bill than our *L. Franklinii*.—

5. *L. Bonapartii*, Swain. and Richards.—Bonapartian Gull.—*North. Zool.* ii. p. 425.—
“With a black bill; the mouth and feet, carmine red; wings, bordered with white anteriorly; posteriorly, together with the back, pearl grey; six exterior quills, black at the end, slightly tipped with white; the first quill entirely black exteriorly; tarsus, scarcely an inch and a half long. Head, greyish black in summer.
“This handsome small gull is common in all parts of the fur countries, where it associates with the terns, and is distinguished by its peculiar shrill and plaintive cry. The *L. capistratus* of the Prince of Musignano differs, according to his description, in the first quill being white exteriorly, pale ash interiorly, in the light brown colour of its head, and in its tail being slightly emarginated, while the tail of *L. Bonapartii* is even inclined to be rounded laterally, than notched in the middle.”
6. *L. roseus*, Macgilliv.—A rare species confined to high latitudes, discovered during Sir Ed. Parry's second voyage, when two specimens were obtained; the one is now in the Edinburgh Museum, the other was presented to Mr Sabine, whose collection has been lately sold to the Andersonian Museum in Glasgow.
7. *L. tridactylus*, Linn.—Kittiwake, Wilson's list.—Inhabiting both continents.
8. *L. canus*, Linn.—Common gull, Wilson's list.—Inhabiting both continents; and numerous during winter in the middle states of America.
9. *L. chburneus*, Gmel.—Inhabits the Arctic circle; migrating occasionally to the temperate regions. A few specimens have been killed in Britain.
10. *L. fuscus*, Linn.—Very common during winter near Philadelphia and New York.
11. *L. argentatoides*, Brehm.—This bird is separated from *Larus argentatus* by Bonaparte, who mentions having shot it on the southern coasts of England. At the same time that he separates it from the herring gull, he expresses a doubt of its being the *L. argentatoides* of Brehm. This I cannot at present decide, but have appended, without any abridgement, the observations and description of a bird referred to this, from the *Northern Zoology*; it is very closely allied at all events to the *L. argentatus*; and it is of importance that the characters of a species said to be killed on our coasts should be properly investigated.

Larus argentatoides.—Arctic silvery gull.

“*Larus argentatus*, Richards. *Append. Parry's Second Voy.*, p. 358, No. 22.—*Larus argentatoides*, Bonap. Syn., No. 299.—*Nocya*, Esquimaux.”

“The Prince of Musignano has distinguished this gull from *Larus argentatus*, with which it had been confounded by most other writers. It is impossible, therefore, to separate its history, or to cite the descriptions of other authors correctly. It was found breeding on Melville Peninsula; and the eggs that were brought home have an oil-green colour, marked with spots and blotches of blackish-brown and subdued purplish grey. It preys much on fish, and is noted at Hudson's Bay for robbing the nets set in the fresh water lakes. I have seen no specimens from Arctic America which I can unequivocally refer to the *Larus argentatus*, as characterised by the Prince of Musignano.”

*Description of a Male, in the Edin. Museum, killed on Melville Peninsula,
June 29, 1822.*

“Colour, mantle pearl grey. Six outer quills crossed by a brownish-black band, which takes in nearly the whole of the first one, but, becoming rapidly narrower on the others, termi-

the neck, breast, whole lower parts, tail-coverts and tail, pure white; the scapulars, wing-coverts, and whole upper parts, are

nates in a spot near the tip of the sixth. The first quill has a white tip an inch and a half long, marked interiorly with a brown spot; the second has a round white spot on its inner web, and, together with the rest of the quill feathers, is tipped with white. Head, neck, rump, tail, and all the under plumage, pure white. Bill wine-yellow, with an orange-coloured spot near the tip of the under mandible. Irides, primrose-yellow. Legs, flesh-coloured.

FORM.—Bill moderately strong, compressed; upper mandible, arched from the nostrils; nostrils, oblong oval; wings, about an inch longer than the tail; thighs, naked for three quarters of an inch; hind toe, articulated rather high.

The young have the upper plumage hair-brown, with reddish brown borders; the head, and under plumage, grey, thickly spotted with pale brown; the tail mostly brown, tipped with white.

DIMENSIONS.—Length, total, 23 inches; of tail, 7 inches, 3 lin.; of wing, 16 inches, 6 lin.; of bill above, 2 inches; of bill to rectus, 3 inches; from nostrils to tip, 11 lin.; of nostrils, $4\frac{1}{2}$ lin.; of tarsus, 2 inches, $4\frac{1}{2}$ lin.; of middle toe, 2 inches, 1 lin.; of middle nail, 5 lin.; of inner toe, 1 inch, 6 lin.; of inner nail, 4 lin.; of hind toe, 3 lin.; length of hind nail, $2\frac{1}{2}$ lin.

Six individuals, killed on Melville Peninsula, in June, July, and September, varied in total length from 23 to 25 inches, and in the length of their tarsi, from 27 to 31 lines.

Bonaparte thus gives the distinctive characters of the two species :—

L. argentatoides.—Back and wings, bluish grey; quills, black at the point, tipped with white, reaching but little beyond the tail; shafts, black; first primary, broadly white at tip; second, with a round white spot besides; tarsus, less than two and a half inches; nostrils, oval; length, twenty inches.

L. argentatus.—Mantle, bluish grey; quills, black at the point, tipped with white, reaching much beyond the tail; shafts, black; first primary only, with a white spot besides the narrow tip; tarsus, nearly three inches; nostrils, linear; length two feet. They are closely allied, and may at once be distinguished by the size."

12. *L. argentatus*, Brunn.—Herring gull, Wilson's List. Common to both continents, and not uncommon near New York and Philadelphia.

13. *L. leucopterus*, Faber.—Inhabiting the Arctic circle, whence it migrates in winter to the Boreal regions of both continents, advancing farther south in America: not rare in the Northern and Middle States.

14. *L. glaucus*, Brunn.—Inhabiting the Arctic regions, and exceedingly rare in the United States.

15. *L. marinus*, Linn.—Black-backed gull, Wilson's List. Not uncommon during winter in the Middle States.

16. *L. zonorhynchus*, Richard.—Ring-billed mew gull, a new species, described in *Northern Zoology*. Bill, ringed rather longer than the tarsus, which measures two and a half inches; mantle, pearl grey; ends of the quills and their shafts, blackish; a short white space on the two exterior ones.

17. *L. bachyrhynchus*, Richard.—Short-billed mew gull. Another species described as new in the *Northern Zoology*. From the description of the present bird, copied from that work, it will be seen that the authors themselves are not decided in their opinions as to the absolute distinction of this and the preceding from *L. canus*, and I have placed them here for the same reason that they are admitted into that valuable work. It is not unlikely that they, or at least the same varieties, may be discovered on our own coasts.

"Short-billed mew gull, with a short, thickish bill; a tarsus scarcely two inches long; quills, not tipped with white; a short white space on the two exterior ones, and blackish shafts."

"Our specimen of this gull is a female, killed on the 23d of May, 1826, at Great Bear Lake. Some brown markings on the tertiaries, primary coverts, and bastard wing, with an imper-

of a fine blue ash colour ; the first five primaries are black towards their extremities ; the secondaries are tipped largely with

feet sub-terminal bar on the tail, point it out as a young bird, most probably commencing its second spring. The rest of its plumage corresponds with that of *L. zonorhynchus*, except that it wants the extreme white tips of the quill feathers, which, on the third and following ones, are very conspicuous in *L. zonorhynchus*. It differs, however, remarkably, in its bill being shorter, though considerably stouter, than that of our *L. canus* ; and, like it, it is wax yellow, with a bright yellow rictus and point. Its tarsus is nearly one third shorter than that of *L. zonorhynchus*. Many may be disposed to consider this and the preceding as merely local varieties of *L. canus* ; and it might be urged, in support of this opinion, that there are considerable differences in the length and thickness of the bills of individuals of the common and winter gulls killed on the English coasts, which are all usually referred to *L. canus*. We have judged it advisable, however, to call the attention of ornithologists to these American birds, by giving them specific names, leaving it to future observation to determine whether they ought to retain the rank of species, or be considered as mere varieties."—RICHARD.

In this place must be introduced the genus *Lestris*, or *Shua*, of which only one species was enumerated by Wilson in his list—the *L. cataractes*, Illiger—the common *Shua* gull of British ornithologists. The Prince of Musignano mentions, in addition, the now well-known European and British species, *L. parasiticus* and *pomarinus*, another somewhat allied, but not yet well distinguished, *L. Buffonii*, Bojè ; and a fifth species is described as new in the *Northern Zoology*, and is dedicated to Dr Richardson—*L. Richardsonii*. It seems closely allied to *L. Buffonii*, but the distinctions yet want clearness and confirmation. It was found breeding in considerable numbers in the barren grounds, at a distance from the coast. The following are Bonaparte's characters of *L. Buffonii*, by which it is alone known.

"*Lestris Buffonii*, Bojè. Bill, one inch and a quarter from the front, straight, notched ; middle tail feathers, gradually tapering, narrow for several inches, ending in a point ; tarsus, one inch and a half long, almost smooth.—Adult, brown ; neck, and beneath, white, the former tinged with yellow.—Young, wholly brownish.

"Arctic bird, Edw. pl. 148 ; BUFF. *Pl. Enl.* 762. *Lestris crepidata*, Brehm."—BONAP. *Syn.* No. 306.

And I add the observations of Mr Swainson regarding *L. Richardsonii* :—

"Richardson's jager, whole plumage, brown ; two middle tail-feathers, abruptly acuminate ; tarsi, black, twenty-two lines long.

"This specimen appears to us to be in full and mature plumage ; we cannot, therefore, view it as the young, or even as the female, of the *Lestris Buffonii* of Bojè, which we only know from the characters assigned to it by the Prince of Musignano. According to this account, the *L. Buffonii* has the bill an inch and a quarter long from the front ; ours is only an inch : the tarsi are described as almost smooth, whereas in ours they are particularly rough. The adult, as figured in plate 762 of the *Pl. Enl.* has the chin, throat, and sides of the neck quite white ; but, in our bird, these parts are of the same pure and decided tint as that of the body, except that the ear feathers, and a few lower down the neck, have a slight tinge of ochre.* The tarsi also, in both the plates cited by the Prince, are coloured yellow. These differences, with the more important one exhibited in the feet, will not permit us to join these birds under one name. Another distinction, which must not be overlooked, is in the colour of the feet. Edwards expressly says of his 'Arctic Bird,' (pl. 149, which much more resembles ours than that figured on the plate immediately preceding,) that 'the legs and toes are all yellow ;' whereas, in our bird, these members are of a deep and shining black ;

* The pure colour or uniform tint of the lower parts will not stand as characters ; in our native species they vary constantly.—Ed.

white, and almost all the primaries slightly; the bend of the wing is white, and nearly three inches long; the tail is almost even, it consists of twelve feathers, and its coverts reach within an inch and a half of its tip; the wings extend two inches beyond the tail; a delicate blush is perceivable on the breast and belly; length of tarsus, two inches.

The head of the female is of a dark dusky slate colour; in other respects, she resembles the male.

In some individuals, the crown is of a dusky grey; the upper part and sides of the neck, of a lead colour; the bill and legs, of a dirty, dark, purplish brown. Others have not the white spots above and below the eyes; these are young birds.

The changes of plumage, to which birds of this genus are subject, have tended not a little to confound the naturalist; and a considerable collision of opinion, arising from an imperfect acquaintance with the living subjects, has been the result. To investigate thoroughly their history, it is obviously necessary that the ornithologist should frequently explore their native haunts; and, to determine the species of periodical or occasional visitors, an accurate comparative examination of many specimens, either alive or recently killed, is indispensable. Less confusion would arise among authors, if they would occasionally abandon their accustomed walks—their studies and their museums, and seek correct knowledge in the only place where it is to be obtained—in the grand temple of nature. As it respects, in particular, the tribe under review, the zealous enquirer would find himself amply compensated for all his toil, by observing these neat and clean birds coursing along the rivers and coast, enlivening the prospect by their airy movements, now skimming closely over the watery element, watching the motions of the surges, and now rising into the higher regions sporting with the winds,—while he inhaled the invi-

while the hinder parts of the tarsi, toes, and connecting membrane, are particularly rough.”
—Sw.

This jager breeds in considerable numbers in the barren grounds, at a distance from the coast. It feeds on shelly mollusca, which are plentiful in the small lakes of the fur countries, and it harasses the gulls in the same way with others of the genus.—Ed

gorating breezes of the ocean, and listened to the soothing murmurs of its billows.

The laughing gull, known in America by the name of the black-headed gull, is one of the most beautiful and most sociable of its genus. They make their appearance on the coast of New Jersey in the latter part of April; and do not fail to give notice of their arrival by their familiarity and loquacity. The inhabitants treat them with the same indifference that they manifest towards all those harmless birds which do not minister either to their appetite or their avarice; and hence the black-heads may be seen in companies around the farmhouse, coursing along the river shores, gleaning up the refuse of the fishermen, and the animal substances left by the tide; or scattered over the marshes and newly-ploughed fields, regaling on the worms, insects and their larvæ, which, in the vernal season, the bounty of Nature provides for the sustenance of myriads of the feathered race.

On the Jersey side of the Delaware Bay, in the neighbourhood of Fishing Creek, about the middle of May, the black-headed gulls assemble in great multitudes, to feed upon the remains of the king crabs which the hogs have left, or upon the spawn which those curious animals deposit in the sand, and which is scattered along the shore by the waves. At such times, if any one approach to disturb them, the gulls will rise up in clouds, every individual squalling so loud, that the roar may be heard at the distance of two or three miles.

It is an interesting spectacle to behold this species when about recommencing their migrations. If the weather be calm, they will rise up in the air, spirally, chattering all the while to each other in the most sprightly manner, their notes at such times resembling the singing of a hen, but far louder, changing often into a *haw, ha ha ha haw!* the last syllable lengthened out like the excessive laugh of a negro. When mounting and mingling together, like motes in the sunbeams, their black heads and wing-tips, and snow-white plumage, give them a very beautiful appearance. After gaining an immense

height, they all move off, with one consent, in a direct line towards the point of their destination.

This bird breeds in the marshes. The eggs are three in number, of a dun clay colour, thinly marked with small irregular touches of a pale purple, and pale brown; some are of a deeper dun, with larger marks, and less tapering than others; the egg measures two inches and a quarter by one inch and a half.

The black-heads frequently penetrate into the interior, especially as far as Philadelphia; but they seem to prefer the neighbourhood of the coast for the purpose of breeding. They retire southward early in autumn.

LITTLE GUILLEMOT.—*URIA ALLE*.—PLATE LXXIV. FIG. 5.

Uria alle, *Temm. Man. d' Orn.* p. 928.—*Alca alle*, *Linn. Syst.* ed. 12, tom. i. p. 211, 5. *Gmel. Syst.* i. p. 554, 5. *Ind. Orn.* p. 795, 10.—*Uria minor*, *Briss.* vi. p. 73, 2.—*Le Petit Guillemot femelle*, *Pl. Enl.* 917.—Small black and white Diver, *Edwards*, pl. 91.—Little Auk, *Lath. Gen. Syn.* iii. p. 327. *Penn. Arct. Zool.* No. 429. *Bewick*, ii. p. 158. *Peale's Museum*, No. 2978.

MERGULUS MELANOLEUCOS.—RAY.*

Mergulus melanoleucos, *Ray, Synop.* p. 125.—*Flem. Brit. Anim.* p. 135.—*Uria* (sub-gen. *mergulus*) *alle*, *Bonap. Synop.* p. 425.—Little Auk, *Mont. Orn. Dict.* and *Supp. Selby, Illust.* pl. LXXXI.—*Uria alle*, *North. Zool.* ii. p. 479.

OF the history of this little stranger, but few particulars are known. With us it is a very rare bird, and, when seen, it is

* I have chosen the name of Ray for this species, as both appropriate, and, as far as my enquiries have led me, entitled to the priority—and the difference in form from the *guillemots* fully entitles it to the rank of a sub-genus. It is the only bird allied in any way to the auks, puffins, &c., which has been figured by Wilson, though several forms occur in the northern seas, and have been pointed out by him, which may be now mentioned, but which will be hereafter figured from the remaining volumes of the *Continuation*, by the Prince of Musignano, now in the press. I have therefore only added an enumeration from the *Synopsis* of that ornithologist, commencing with the guillemots, for which the genus *Uria* has been adopted; by some the black guillemot is separated, on account of straight-

generally in the vicinity of the sea. The specimen described, was killed at Great Egg Harbour, in the month of December, 1811, and was sent to Wilson as a great curiosity. It measured nine inches in length, and fourteen in extent; the bill,

ness of the mandibles, whereas in the common they are both bent at the tip. In our present state of knowledge I prefer retaining them together.

Uria, Briss.

1. *U. troile*. Foolish Guillemot.—Common to both continents, and found during winter on the coasts of the United States.
2. *U. Brunichii*.—Sab.—Inhabits both continents, and is common in Davis' Straits, Baffin's Bay, &c. It has been said to have occurred once or twice on the British coasts.
3. *U. grylle*.—Black Guillemot.—Common to both continents, and found during winter along the coasts of the United States. A few pairs breed annually on the rocky islands on the Frith of Forth. I have repeatedly found them on the Isle of May.
4. *U. marmorata*, Lath.—Brown, undulated with chestnut; beneath, dusky, spotted with white; feet, orange; bill, black, one inch long. Inhabits the north-western coasts of America, and the opposite shore of Asia.

These are the characters given by Bonaparte to the last bird. Will it not be the immature state of some other species?

Phaleris, Temm.

1. *P. psittacula*, Temm.—Perrequet Auk.—Inhabits the north-western coasts of America, and the opposite ones of Asia. Common in Kamtschatka.
2. *P. cristatella*, Temm.—Crested Auk.—The Prince of Musignano is only of opinion that this may be found on the western shores of America; it is known in the Japan seas, and the north-eastern coast of Africa. He thinks also that the *alca antiqua* of Latham may prove a third North American species of *Phaleris*.

Another bird, (*Phaleris cerorhinca*,) entering formerly into this genus, has been separated by the Prince of Musignano, and placed in a subgenus, *Cerorhinca*, to be figured in his fourth volume.

Cerorhinca, Bonap.

1. *C. occidentalis*, Bonap.—Inhabits the western coasts of North America.

Mormon, Illig.

1. *M. cirrhatius*, Temm.—Tufted Auk, Lath.—Inhabits the sea between North America and Kamtschatka; often seen on the western coasts of the United States in winter.
2. *M. glacialis*, Leach.—Puffin of Wilson's list.—Inhabits the Arctic parts of both continents; not uncommon in winter on the coasts of the United States.

This species has of late been looked for on the coasts of Britain, but yet, I believe, without success. The chief and easiest detected difference is in the size and form of the bill. Mr Pennant observed a difference in the bills of several species from different parts, and Dr Fleming puts the question—"Have we two species?" I think it more than probable that this bird has been overlooked from its

upper part of the head, back, wings, and tail, were black ; the upper part of the breast and hind head, were grey, or white, mixed with ash ; the sides of the neck, whole lower parts, and tips of secondaries, were pure white ; feet and legs, black ; shins, pale flesh colour ; above each eye, there was a small spot of white ; * the lower scapulars, streaked slightly with the same.

The little guillemot is said to be but a rare visitant of the British isles. It is met with in various parts of the north, even as far as Spitzbergen ; is common in Greenland, in company with the black-billed auk, and feeds upon the same kind of food. The Greenlanders call it the ice-bird, from the circumstance of its being the harbinger of ice. It lays two bluish white eggs, larger than those of the pigeon. It flies quick, and dives well ; and is always dipping its bill into the water while swimming, or at rest on that element ; walks better on land than others of the genus. It grows fat in the stormy season, from the waves bringing plenty of crabs and small fish within its reach. It is not a very crafty bird, and may be easily taken. It varies to quite white, and sometimes is found with a reddish breast.†

To the anatomist, the internal organization of this species is deserving attention : it is so constructed as to be capable of contracting or dilating itself at pleasure. We know not what Nature intends by this conformation, unless it be to facilitate diving, for which the compressed form is well adapted ; and likewise the body, when expanded, will be rendered more buoyant, and fit for the purpose of swimming upon the surface of the water.

near alliance, and that, though comparatively rare, it will be yet found to occur on our own coasts.

3. *Mormon arcticus*.—Puffin of Wilson's list.—The common puffin of Europe, and migratory to the temperate shores of the United States.

Alca, Linn.

1. *A. torda*.—Razorbill of Wilson's list.—Common in winter along the coasts of the United States.
2. *A. impennis*.—Great Auk.—Inhabits the Arctic seas of both continents, where it is almost constantly resident.

* In Peale's Museum, there is an excellent specimen of this species, which has likewise a smaller spot below each eye.

† LATHAM ; PENNANT.

TURKEY VULTURE, OR TURKEY BUZZARD.—VULTUR
AURA.—PLATE LXXV. FIG. 1.

Vultur aura, *Linn. Syst.* ed. 10, tom. i. p. 86, 4.—*Ind. Orn.* p. 4, No. 8.—
Vieillot, *Ois. de l'Am. Sep.* i. p. 25, pl. 2, vis.—Carrion crow, *Sloane, Jam.* ii.
p. 294. fol. 254.—Carrion vulture, *Lath. Gen. Syn.* i. p. 9.—Le vautour du
Brésil, *Briss.* i. p. 468.—Turkey buzzard, *Catesby, Car.* i. p. 6.—*Bartram's
Travels*, p. 289.—Cozca quantitti, *Clavigero, Hist. Mex.* i. p. 47; *Eng. Trans.*
—American vulture, *Shaw, Gen. Zool.* vii. p. 36.—*Peale's Museum*, No. 11, m.;
12, fem.

CATHARTES AURA.—ILLIGER.*

Cathartes aura, *Illig. Prod.*—*Bonap. Synop.* p. 33.—*North. Zool.* ii. p. 4.

THIS species is well known throughout the United States, but is most numerous in the southern section of the Union. In

* The vultures are comparatively a limited race, and exist in every quarter of the world, New Holland excepted; * but their range is chiefly in the warm latitudes.

Those of the New World seem to be contained in two genera, *Sarcorampus* of Dumeril, and *Cathartes* of Illiger; the one containing the condur and Californian vultures; the other, the turkey buzzards, &c. of Wilson. They are, perhaps, generally, the most unseemly and disgusting of the whole feathered race, of loose and ill kept plumage, of sluggish habits when not urged on by hunger, feeding on any animal food which they can easily tear to pieces, but often upon the most putrid and loathsome carrion. They have been introduced by the ancients, in their beautiful but wild conceptions and imagery, and have been embodied in the tales of fiction, and poems of the modern day, as all that is lurid disgusting, and horrible. They are the largest of the feathered race, if we except the *Struthionidæ*, or that group to which the ostrich, cassowary, and bustards belong, and have long been celebrated on account of their great strength. Many

* I have said "New Holland excepted," because we have yet no well authenticated instance of any thing approaching this form from that very interesting country. The New Holland vulture of Latham rests, to a certain extent, on dubious authority, and cannot now be referred to. I have no doubt that some representing group will be ultimately discovered, which may perhaps elucidate the principal forms wanting to the *Raptores*, and I know that Mr Swainson possesses a New Holland bird, whose station he has been unable to decide whether it will enter here, or range with the gallinaceous birds. I trust that that gentleman will, ere long, work out its affinities as far as possible, and give it to the public.—ED.

the Northern and Middle States, it is partially migratory, the greater part retiring to the south on the approach of cold

fabulous stories are recorded of the formidable condur carrying off men, bullocks, and even elephants.

They have been called the scavengers of nature; and in warm climates, where all animal matter so soon decays, they are no doubt useful in clearing off what would soon fill the air with noxious miasmata. In many parts of Spain, and southern Europe, the *Neophron percnopterus*, or Egyptian vulture of Savigny, and in America, the native species, are allowed to roam unmolested through the towns, and are kept in the market places, as storks are in Holland, to clear away the refuse and offal; and a high penalty is attached to the destruction of any of them. In this state they become very familiar and independent. Mr Audubon compares them to a garrisoned half-pay soldier; "to move is for them a hardship; and nothing but extreme hunger will make them fly down from the roof of the kitchen into the yard. At Natchez, the number of these expecting parasites is so great, that all the refuse within their reach is insufficient to maintain them." They appear also to have been used for a most revolting purpose among barbarous nations, or at least, in conjunction with wild animals, were depended upon to assist in destroying and clearing away the dead, which were purposely exposed to their ravages. Some, however, are elegant and graceful in their form and plumage, and vie with the eagles in strength and activity. Such is the *Vultur barbatus* of Edwards, the lammergeyer of the European Alps.

Independent of the species mentioned by our author, three others have been described as natives of this continent, *Sarcoramphus gryphus* and *Californianus* of Dumeril, and the *Cathartes papa* of Illiger; the former supposed to be the celebrated Roc of Sinbad, the no less noted Condur of moderns. They are found on the north-west chain of the Andes, frequenting, and not indeed generally met with until, near the limits of eternal snow, where they may be seen perched on the summit of a projecting rock, or sweeping round on the approach of an intruder, in expectation of prey, and looking, when opposed to a clear sky, of double magnitude.

"Moving athwart the evening sky,
Seem forms of giant height."

The stories of their destructive propensities are, to a certain extent, unfounded. No instance is recorded by any late travellers, of children being carried off, and all their enquiries proved the reverse. It is a much-followed occupation by the peasantry at the base of the Andes to ascend in search of ice for the luxury of the towns, and their children, at a very tender age, carried with them, are frequently left at considerable distances, unprotected; they always remain in security. The *S. Californianus* was first known from a specimen in the British Museum, brought from California. Mr Douglas found it more lately in the woody districts of that country; and I have transcribed his interesting account of its manners, &c. "These gigantic birds, which represent the condur

weather. But numbers remain all the winter in Maryland, Delaware, and New Jersey ; particularly in the vicinity of the

in the northern hemisphere, are common along the coast of California, but are never seen beyond the woody parts of the country. I have met with them as far to the north as 49 deg. North lat., in the summer and autumn months, but nowhere so abundantly as in the Columbian valley, between the grand rapids and the sea. They build their nests in the most secret and impenetrable parts of the pine forests, invariably selecting the loftiest trees that overhang precipices on the deepest and least accessible parts of the mountain valleys. The nest is large, composed of strong thorny twigs and grass, in every way similar to that of the eagle tribe, but more slovenly constructed. The same pair resort for several years to the same nest, bestowing little trouble or attention in repairing it. Eggs, two, nearly spherical, about the size of those of a goose, jet black. Period of incubation, twenty-nine or thirty-one days. They hatch generally about the first of June. The young are covered with thick whitish down, and are incapable of leaving the nest until the fifth or sixth week. Their food is carrion, dead fish, or other dead animal substance; in no instance will they attack any living animal, unless it be wounded and unable to walk. Their senses of smelling and seeing are remarkably keen. In searching for prey, they soar to a very great altitude, and when they discover a wounded deer, or other animal, they follow its track, and when it sinks, precipitately descend on their object. Although only one is at first seen occupying the carcass, few minutes elapse before the prey is surrounded by great numbers; and it is then devoured to a skeleton within an hour, even though it be one of the larger animals—*Cervus elaphus*, for instance—or a horse. Their voracity is almost insatiable, and they are extremely ungenerous, suffering no other animal to approach them while feeding. After eating, they become so sluggish and indolent, as to remain in the same place until urged by hunger to go in quest of another repast. At such times they perch on decayed trees, with their heads so much retracted, as to be with difficulty observed through the long, loose, lanceolate feathers of the collar. The wings, at the same time, hang down over the feet. This position they invariably preserve in dewy mornings, or after rains."

The third species, *C. papa*, not mentioned by Wilson, is introduced in the *Synopsis of Birds of the United States*, by the Prince of Musignano, who mentions its occurrence only in the warmer parts of North America; it appears occasionally in Florida during summer. The other two are of much more frequent occurrence, and are of less noble dispositions, more sluggish, very easily intimidated, and dirty in the extreme. Truly clearing away all animal matter, they assemble in vast troops upon the discovery of some dead, or nearly dying animal, and exhibit at their feasts scenes of the utmost gluttony and filth. Their power of scenting their quarry from afar, has been proved erroneous, by the well-managed experiments of Mr Audubon; and, indeed, I never was inclined to think that any birds were endowed with any remarkable development of this particular sense.—ED.

large rivers and the ocean, which afford a supply of food at all seasons.

In New Jersey, * the turkey buzzard hatches in May, the deep recesses of the solitary swamps of that state affording situations well suited to the purpose. The female is at no pains to form a nest with materials ; but, having chosen a suitable place, which is either a truncated hollow tree, an excavated stump, or log, she lays on the rotten wood from two to four eggs, of a dull dirty white, or pale cream colour, splashed all over with chocolate, mingled with blackish touches, the blotches largest and thickest towards the great end ; the form something like the egg of a goose, but blunter at the small end ; length, two inches and three quarters, breadth two inches. The male watches often while the female is sitting ; and, if not disturbed, they will occupy the same breeding place for several years. The young are clothed with a whitish down, similar to that which covers young goslings. If any person approach the nest, and attempt to handle them, they will immediately vomit such offensive matter, as to compel the intruder to a precipitate retreat.

The turkey buzzards are gregarious, peaceable and harmless, never offering any violence to a living animal, or, like the plunderers of the *Falco* tribe, depriving the husbandman of his stock. Hence, though, in consequence of their filthy habits, they are not beloved, yet they are respected for their usefulness ; and in the Southern States, where they are most needed, they, as well as the black vultures, are protected by a law which imposes a fine on those who wilfully deprive them of life. They generally roost in flocks, on the limbs of large trees ; and they may be seen on a summer morning, spreading out their wings to the rising sun, and remaining in that posture for a consider-

* Mr Ord mentions New Jersey in particular, as in that state he has visited the breeding places of the turkey buzzard, and can therefore speak with certainty of the fact. Pennsylvania, it is more than probable, affords situations equally attractive, which are also tenanted by this vulture, for hatching and rearing its young.

able time. Pennant conjectures, that this is "to purify their bodies, which are most offensively fetid." But is it reasonable to suppose, that *that* effluvia can be offensive to them, which arises from food perfectly adapted to their nature, and which is constantly the object of their desires? Many birds, and particularly those of the granivorous kind, have a similar habit, which doubtless is attended with the same exhilarating effects, as an exposure to the pure air of the morning has on the frame of one just risen from repose.

These birds, unless when rising from the earth, seldom flap their wings, but sweep along in ogees, and dipping and rising lines, and move with great rapidity. They are often seen in companies, soaring at an immense height, particularly previous to a thunder-storm. Their wings are not spread horizontally, but form a slight angle with the body upwards, the tips having an upward curve. Their sense of smelling is astonishingly exquisite, and they never fail to discover carrion, even when at the distance of several miles from it. When once they have found a carcass, if not molested, they will not leave the place until the whole is devoured. At such times they eat so immoderately, that frequently they are incapable of rising, and may be caught without much difficulty; but few that are acquainted with them will have the temerity to undertake the task. A man in the State of Delaware, a few years since, observing some turkey buzzards regaling themselves upon the carcass of a horse which was in a highly putrid state, conceived the design of making a captive of one, to take home for the amusement of his children. He cautiously approached, and, springing upon the unsuspecting group, grasped a fine plump fellow in his arms, and was bearing off his prize in triumph; when, lo! the indignant vulture disgorged such a torrent of filth in the face of our hero, that it produced all the effects of the most powerful emetic, and for ever cured him of his inclination for turkey buzzards.

On the continent of America, this species inhabits a vast

range of territory, being common*, it is said, from Nova Scotia to Terra del Fuego.† How far to the northward of North California‡ they are found, we are not informed; but it is probable that they extend their migrations to the Columbia, allured thither by the quantity of dead salmon which, at certain seasons, line the shores of that river.

They are numerous in the West India islands, where they are said to be “far inferior in size to those of North America.”§ This leads us to the enquiry, whether or not the present species has been confounded, by all the naturalists of Europe, with the black vulture, or carrion crow, which is so common in the southern parts of our continent. If not, why has the latter been totally overlooked in the numerous ornithologies and nomenclatures with which the world has been favoured, when it is so conspicuous and remarkable, that no stranger visits South Carolina, Georgia, or the Spanish provinces, but is immediately struck with the novelty of its appearance? We can find no cause for the turkey buzzards of the islands|| being smaller

* In the Northern States of our Union, the turkey buzzard is only occasionally seen. It is considered a rare bird by the inhabitants.

† “Great numbers of a species of vulture, commonly called carrion crow by the sailors (*Vultur aura*), were seen upon this island, (New-Year’s Island, near Cape Horn, lat. 55 S. 67 W.) and probably feed on young seal cubs, which either die in the birth, or which they take an opportunity to seize upon.” Cook calls them turkey buzzards. Forster’s *Voyage*, ii. p. 516, 4to. London, 1777. We strongly suspect that the sailors were correct, and that these were black vultures, or carrion crows.

‡ Pérouse saw a bird, which he calls the black vulture, probably the *Vultur aura*, at Monteray Bay, North California.—*Voyage*, ii. p. 203.

§ Pennant, *Arctic Zoology*.

|| The vulture which Sir Hans Sloane has figured and described, and which he says is common in Jamaica, is undoubtedly the *Vultur aura*. “The head, and an inch in the neck, are bare, and without feathers, of a flesh colour, covered with a thin membrane, like that of turkeys, with which the most part of the bill is covered likewise; bill, below the membrane, more than an inch long, whitish at the point; tail, broad, and nine inches long; legs and feet, three inches long; it flies exactly like a kite, and preys on nothing living; but when dead, it devours their carcasses, whence they are not molested.”—Sloane, *Natural History of Jamaica*, vol. ii. p. 294, folio.

than ours, and must conclude that the carrion crow, which is of less size, has been mistaken for the former. In the history which follows, we shall endeavour to make it evident that the species described by Ulloa, as being so numerous in South America, is no other than the black vulture. The ornithologists of Europe, not aware of the existence of a new species, have, without investigation, contented themselves with the opinion that the bird, called by the above-mentioned traveller the gallinazo, was the *Vultur aura*, the subject of our present history. This is the more inexcusable, as we expect in naturalists a precision of a different character from that which distinguishes vulgar observation. If the Europeans had not the opportunity of comparing living specimens of the two species, they at least had preserved subjects, in their extensive and valuable museums, from which a correct judgment might have been formed. The figure in the *Planches enluminées*, though wretchedly drawn and coloured, was evidently taken from a stuffed specimen of the black vulture.

Pennant observes, that the turkey vultures "are not found in the northern regions of Europe or Asia, at least in those latitudes which might give them a pretence of appearing there. I cannot find them," he continues, "in our quarter of the globe, higher than the Grison Alps,* or Silesia,† or at farthest Kalish, in Great Poland."‡

Kolben, in his account of the Cape of Good Hope, mentions a vulture, which he represents as very voracious and noxious. "I have seen," says he, "many carcasses of cows, oxen, and other tame creatures, which the eagles had slain. I say carcasses, but they were rather skeletons, the flesh and entrails being all devoured, and nothing remaining but the skin and bones. But the skin and bones being in their natural places, the flesh being, as it were, scooped out, and the wound by which the eagles enter the body being ever in the belly, you would not, till you had come up to the skeleton, have had the

* Willughby, *Ornithology*, p. 67.

† Schwenckfeldt, *av. Silesia*, 375.

‡ Rzaczyński, *Hist. Nat. Poland*, 298.

least suspicion that any such matter had happened. The Dutch at the Cape frequently call those eagles, on account of their tearing out the entrails of beasts, *strunt-vogels*, i. e. dung-birds. It frequently happens, that an ox that is freed from the plough, and left to find his way home, lies down to rest himself by the way : and if he does so, it is a great chance but the eagles fall upon him and devour him. They attack an ox or cow in a body, consisting of an hundred and upwards.”*

Buffon conjectures, that this murderous vulture is the turkey buzzard, and concludes his history of the latter with the following invective against the whole fraternity :—“ In every part of the globe they are voracious, slothful, offensive, and hateful, and, like the wolves, are as noxious during their life, as useless after their death.”

If Kolben’s account of the ferocity of his eagle,† or vulture, be just, we do not hesitate to maintain that that vulture is not the turkey buzzard, as, amongst the whole feathered creation, there is none, perhaps, more innoxious than this species ; and that it is beneficial to the inhabitants of our southern continent, even Buffon himself, on the authority of Desmarchais, asserts. But we doubt the truth of Kolben’s story ; and, in this place, must express our regret, that enlightened naturalists should so readily lend an ear to the romances of travellers, who, to excite astonishment, freely give currency to every ridiculous tale, which the designing or the credulous impose upon them. We will add farther, that the turkey buzzard seldom begins upon a carcass, until invited to the banquet by that odour, which in no ordinary degree renders it an object of delight.

The turkey vulture is two feet and a half in length, and six

* Medley’s *Kolben*, vol. ii. p. 135.

† These bloodthirsty eagles, we conjecture, are black vultures, they being in the habit of mining into the bellies of dead animals, to feast upon the contents. With respect to their attacking those that are living, as the vultures of America are not so heroic, it is a fair inference that the same species elsewhere is possessed of a similar disposition.

feet two inches in breadth ; the bill from the corner of the mouth is almost two inches and a half long, of a dark horn colour for somewhat more than an inch from the tip, the nostril a remarkably wide slit, or opening through it ; the tongue is greatly concave, cartilaginous, and finely serrated on its edges ; ears inclining to oval ; eyes dark, in some specimens reddish hazel ; the head and neck, for about an inch and a half below the ears, are furnished with a reddish wrinkled skin, beset with short black hairs, which also cover the bill as far as the interior angle of the nostril, the neck not so much caruncled as that of the black vulture ; from the hind head to the neck feathers the space is covered with down of a sooty black colour ; the fore part of the neck is bare as far as the breast bone, the skin on the lower part, or pouch, very much wrinkled ; this naked skin is not discernible without removing the plumage which arches over it ; the whole lower parts, lining of the wings, rump, and tail-coverts, are of a sooty brown, the feathers of the belly and vent hairy ; the plumage of the neck is large and tumid, and, with that of the back and shoulders, black ; the scapulars and secondaries are black on their outer webs, skirted with tawny brown, the latter slightly tipped with white ; primaries and their coverts, plain brown, the former pointed, third primary the longest ; coverts of the secondaries, and lesser coverts, tawny brown, centred with black, some of the feathers at their extremities slightly edged with white ; the tail is twelve inches long, rounded, of a brownish black, and composed of twelve feathers, which are broad at their extremities ; inside of wings and tail, light ash ; the wings reach to the end of the tail ; the whole body and neck beneath the plumage are thickly clothed with a white down, which feels like cotton ; the shafts of the primaries are yellowish white above, and those of the tail brown, both pure white below ; the plumage of the neck, back, shoulders, scapulars, and secondaries, is glossed with green and bronze, and has purple reflections ; the thighs are feathered to the knees ; feet considerably webbed ; middle toe three inches and a half in length, and about an inch and a half

longer than the outer one, which is the next longest; the sole of the foot is hard and rough; claws dark horn colour; the legs are of a pale flesh colour, and three inches long. The claws are larger, but the feet slenderer than those of the carrion crow. The bill of the male is pure white; in some specimens the upper mandible is tipped with black. There is little or no perceptible difference between the sexes.

The bird from which the foregoing description was taken, was shot for this work, at Great Egg Harbour, on the 30th of January. It was a female, in perfect plumage, excessively fat, and weighed five pounds one ounce avoirdupois. On dissection it emitted a slight musky odour.

The vulture is included in the catalogue of those fowls declared unclean and an abomination by the Levitical law, and which the Israelites were interdicted eating.* We presume that this prohibition was religiously observed, so far at least as it related to the vulture, from whose flesh there arises such an unsavoury odour, that we question if all the sweetening processes ever invented could render it palatable to Jew, Pagan, or Christian.

Since the above has been ready for the press, we have seen the History of the Expedition under the command of Lewis and Clark, and find our conjecture with respect to the migration of the turkey buzzard verified, several of this species having been observed at Brant Island, near the Falls of the Columbia.†

* *Leviticus*, xi, 14. *Deuteronomy*, xiv. 13.

† *History of the Expedition*, vol. ii. p. 233.

BLACK VULTURE, OR CARRION CROW.—VULTUR JOTA.

PLATE LXXV. FIG. 2.

Vultur jota, *Gmel. Syst.* i. p. 247.—*Molina, Hist. Chili*, i. p. 185.—*Am. Trans.*—Zalipot, *Clavigero, Hist. Mex.* i. p. 47. *Eng. Trans.*—Gallinazo, *Ulloa, Voy.* i. p. 52. *Amsterdam Ed.*—Vultur atratus, *Bartram*, p. 289.—Vautour du Brésil, *Pl. Enl.* 189.—Vultur aura, *B. Lath. Ind. Orn.* p. 5.—Le vautour urubu, *Vieil. Ois. de l'Am. Sep.* i. p. 23, pl. 2.—*Peale's Museum*, No. 13.

VULTUR JOTA.—BONAPARTE.*

Vultur jota, *Bonap. Synop.* p. 23.—*Cathartes atratus*, *North. Zool.* ii. p. 6.

ALTHOUGH an account of this vulture was published more than twenty years ago, by Mr William Bartram, wherein it was distinctly specified as a different species from the preceding, yet it excites our surprise that the ornithologists should have persisted in confounding it with the turkey buzzard; an error which can hardly admit of extenuation, when it is considered what a respectable authority they had for a different opinion.

The habits of this species are singular. In the towns and villages of the Southern States, particularly Charleston and Georgetown, South Carolina, and in Savannah, Georgia, the carrion crows may be seen either sauntering about the streets; sunning themselves on the roofs of the houses, and the fences; or, if the weather be cold, cowering around the tops of the chimneys, to enjoy the benefit of the heat, which to them is a peculiar gratification. They are protected by a law, or usage; and may be said to be completely domesticated, being as com-

* Mr Swainson, in a note to the description of this bird in the *Northern Zoology*, remarks, as a reason for changing the name given by Bonaparte—"We have not considered it expedient to apply to this bird the scientific name of *Iota*, given by Molina to a black vulture of Chili, because there is no evidence to prove that it is the turkey buzzard of North America." Neither is there present proof that it is not, therefore we retain Bonaparte's name.—Ed.

mon as the domestic poultry, and equally familiar. The inhabitants generally are disgusted with their filthy, voracious habits; but notwithstanding, being viewed as contributive to the removal of the dead animal matter, which, if permitted to putrify during the hot season, would render the atmosphere impure, they have a respect paid them as scavengers, whose labours are subservient to the public good. It sometimes happens, that, after having gorged themselves, these birds vomit down the chimneys, which must be intolerably disgusting, and must provoke the ill-will of those whose hospitality is thus requited.

The black vultures are indolent, and may be observed in companies loitering for hours together in one place. They do not associate with the turkey buzzards; and are much darker in their plumage than the latter. Their mode of flight also varies from that of the turkey buzzard. The black vulture flaps its wings five or six times rapidly, then sails with them extended nearly horizontally; the turkey buzzard seldom flaps its wings, and, when sailing, they form an angle with the body upwards. The latter, though found in the vicinity of towns, rarely ventures within them, and then always appearing cautious of the near approach of any one. It is not so impatient of cold as the former, and is likewise less lazy. The black vulture, on the ground, hops along very awkwardly; the turkey buzzard, though seemingly inactive, moves with an even gait. The latter, unless pressed by hunger, will not eat of a carcass until it becomes putrid; the former is not so fastidious, but devours animal food without distinction.

It is said that the black vultures sometimes attack young pigs, and eat off their ears and tails; and we have even heard stories of their assaulting feeble calves, and picking out their eyes. But these instances are rare: if otherwise, they would not receive that countenance or protection which is so universally extended to them, in the States of South Carolina and Georgia, where they abound.

“This undescribed species,” says Mr Bartram, “is a native of the maritime parts of Georgia and of the Floridas, where

they are called carrion crows. They flock together, and feed upon carrion, but do not mix with the turkey buzzard (*Vultur aura*). Their wings are broad, and round at their extremities. Their tail, which they spread like a fan when on the wing, is remarkably short. They have a heavy, laborious flight, flapping their wings, and sailing alternately. The whole plumage is of a sable, or mourning colour.”*

In one of Mr Wilson’s journals, I find an interesting detail of the greedy and disgusting habits of this species; and shall give the passage entire, in the same unadorned manner in which it is written.

“February 21, 1809.—Went out to Hampstead † this forenoon. A horse had dropped down in the street, in convulsions; and dying, it was dragged out to Hampstead, and skinned. The ground, for a hundred yards around it, was black with carrion crows; many sat on the tops of sheds, fences, and houses within sight; sixty or eighty on the opposite side of a small run. I counted at one time two hundred and thirty-seven, but I believe there were more, besides several in the air over my head, and at a distance. I ventured cautiously within thirty yards of the carcass, where three or four dogs, and twenty or thirty vultures, were busily tearing and devouring. Seeing them take no notice, I ventured nearer, till I was within ten yards, and sat down on the bank. Still they paid little attention to me. The dogs being sometimes accidentally flapped with the wings of the vultures, would growl and snap at them, which would occasion them to spring up for a moment, but they immediately gathered in again. I remarked the vultures frequently attack each other, fighting with their claws or heels, striking like a cock, with open wings, and fixing their claws in each other’s head. The females, and, I believe, the males likewise, made a hissing sound, with open mouth, exactly resembling that produced by thrusting a red hot

* MS. in the possession of Mr Ord.

† Near Charleston, South Carolina.

poker into water ; and frequently a snuffing, like a dog clearing his nostrils, as I suppose they were theirs. On observing that they did not heed me, I stole so close that my feet were within one yard of the horse's legs, and again sat down. They all slid aloof a few feet ; but, seeing me quiet, they soon returned as before. As they were often disturbed by the dogs, I ordered the latter home : my voice gave no alarm to the vultures. As soon as the dogs departed, the vultures crowded in such numbers, that I counted at one time thirty-seven on and around the carcass, with several within ; so that scarcely an inch of it was visible. Sometimes one would come out with a large piece of the entrails, which in a moment was surrounded by several others, who tore it in fragments, and it soon disappeared. They kept up the hissing occasionally. Some of them having their whole legs and heads covered with blood, presented a most savage aspect. Still as the dogs advanced, I would order them away, which seemed to gratify the vultures ; and one would pursue another to within a foot or two of the spot where I was sitting. Sometimes I observed them stretching their necks along the ground, as if to press the food downwards."

The carrion crow is seldom found on the Atlantic, to the northward of Newbern, North Carolina,* but inhabits the whole continent, to the southward, as far as Cape Horn. Don Ulloa, in noticing the birds of Carthagera, gives an account of a vulture, which we shall quote, in order to establish the opinion, advanced in the preceding history, that it is the present species. We shall afterwards subjoin other testimony in confirmation of this opinion. With respect to the marvellous tale of their attacking the cattle in the pastures, it is too improbable to merit a serious refutation.

"It would be too great an undertaking to describe all the

* Since writing the above, I have been informed by a gentleman who resides at Detroit, on Lake Erie, that the carrion crow is common at that place.

extraordinary birds that inhabit this country ; but I cannot refrain from noticing that to which they give the name of *Gallinazo*, from the resemblance it has to the turkey-hen. This bird is of the size of a pea-hen, but its head and neck are something larger. From the crop to the base of the bill it has no feathers : this space is surrounded with a wrinkled, glandulous, and rough skin, which forms numerous warts, and other similar inequalities. This skin is black, as is the plumage of the bird, but usually of a brownish black. The bill is well proportioned, strong, and a little hooked. These birds are familiar in Carthagera ; the tops of the houses are covered with them ; it is they which cleanse the city of all its animal impurities. There are few animals killed whereof they do not obtain the offals ; and when this food is wanting, they have recourse to other filth. Their sense of smelling is so acute, that it enables them to trace carrion at the distance of three or four leagues, which they do not abandon until there remains nothing but the skeleton.

“ The great number of these birds found in such hot climates, is an excellent provision of nature ; as, otherwise, the putrefaction caused by the constant and excessive heat, would render the air insupportable to human life. When first they take wing, they fly heavily ; but afterwards, they rise so high as to be entirely invisible. On the ground they walk sluggishly. Their legs are well proportioned ; they have three toes forward, turning inwards, and one on the inside, inclining a little backwards, so that, the feet interfering, they cannot walk with any agility, but are obliged to hop : each toe is furnished with a long and stout claw.

“ When the gallinazos are deprived of carrion, or food in the city, they are driven by hunger among the cattle of the pastures. If they see a beast with a sore on the back, they alight on it, and attack the part affected ; and it avails not that the poor animal *throws itself upon the ground*, and endeavours to intimidate them by its bellowing : *they do not quit their hold !*

and by means of their bill they so soon enlarge the wound, that the animal finally becomes their prey.”*

The account, from the same author, of the beneficial effects resulting from the fondness of the vultures for the eggs of the alligator, merits attention :—

“ The gallinazos are the most inveterate enemies of the alligators, or rather they are extremely fond of their eggs, and employ much stratagem to obtain them. During the summer, these birds make it their business to watch the female alligators ; for it is in that season that they deposit their eggs in the sand of the shores of the rivers, which are not then overflowed. The gallinazo conceals itself among the branches and leaves of a tree, so as to be unperceived by the alligator ; and permits the eggs quietly to be laid, not even interrupting the precautions that she takes to conceal them. But she is no sooner under the water, than the gallinazo darts upon the nest ; and, with its bill, claws, and wings, uncovers the eggs, and gobbles them down, leaving nothing but the shells. This banquet would, indeed, richly reward its patience, did not a multitude of gallinazos join the fortunate discoverer, and share in the spoil.

“ How admirable the wisdom of that Providence, which hath given to the male alligator an inclination to devour its own offspring, and to the gallinazo a taste for the eggs of the female ! Indeed, neither the rivers, nor the neighbouring fields, would otherwise be sufficient to contain the multitudes that are hatched ; for, notwithstanding the ravages of both these insatiable enemies, one can hardly imagine the numbers that remain.”†

The Abbé Clavigero, in his *History of Mexico*, has clearly indicated the present species, as distinguished from the turkey buzzard :—

“ The business of clearing the fields of Mexico, is reserved

* *Voyage Historique de L’Amerique Meridionale*, par Don George Juan et Don Antoine de Ulloa, liv. i. chap. viii. p. 52. A Amsterdam et à Leipzig, 1752, 4to.

† Liv. iv. chap. ix. p. 172.

principally for the *zopilots*, known in South America by the name of *gallinazzi*; in other places, by that of *aure*; and in some places, though very improperly, by that of *ravens*. There are two very different species of these birds: the one, the *zopilot*, properly so called; the other, called the *cozcaquauhtli*: they are both bigger than the raven. These two species resemble each other in their hooked bill and crooked claws, and by having upon their head, instead of feathers, a wrinkled membrane with some curling hairs. They fly so high, that, although they are pretty large, they are lost to the sight; and especially before a hail storm they will be seen wheeling, in vast numbers, under the loftiest clouds, till they entirely disappear. They feed upon carrion, which they discover, by the acuteness of their sight and smell, from the greatest height, and descend upon it with a majestic flight, in a great spiral course. They are both almost mute. The two species are distinguished, however, by their size, their colour, their numbers, and some other peculiarities. The *zopilots*, properly so called, have black feathers, with a brown head, bill, and feet; they go often in flocks, and roost together upon trees. This species is very numerous, and is to be found in all the different climates; while, on the contrary, the *cozcaquauhtli* is far from numerous, and is peculiar to the warmer climates alone.* The latter bird is larger than the *zopilot*, has a red head and feet, with a beak of a deep red colour, except towards its extremity, which is white. Its feathers are brown, except upon the neck and parts about the breast, which are of a reddish black. The wings are of an ash colour upon the inside, and, upon the outside, are variegated with black and tawny.

“The *cozcaquauhtli* is called by the Mexicans *king of the zopilots*;† and they say, that, when these two species happen to meet together about the same carrion, the *zopilot* never begins to eat till the *cozcaquauhtli* has tasted it. The *zopilot*

* This is a mistake.

† This is the *Vultur aura*. The bird which now goes by the name of *king of the zopilots*, in New Spain, is the *Vultur papa* of Linnæus.

is a most useful bird to that country, for it not only clears the fields, but attends the crocodiles, and destroys the eggs which the females of those dreadful amphibious animals leave in the sand to be hatched by the heat of the sun. The destruction of such a bird ought to be prohibited under severe penalties.”*

We are almost afraid of trespassing upon the patience of the reader by the length of our quotations; but as we are very anxious that the subject of this article should enjoy that right to which it is fairly entitled, of being ranked as an independent species, we are tempted to add one testimony more, which we find in the *History of Chili*, by the Abbé Molina.

“The *jota* (*Vultur jota*) resembles much the *aura*, a species of vulture, of which there is, perhaps, but one variety. It is distinguished, however, by the beak, which is grey, with a black point. Notwithstanding the size of this bird, which is nearly that of the turkey, and its strong and crooked talons, it attacks no other, but feeds principally upon carcasses and reptiles. It is extremely indolent, and will frequently remain, for a long time, almost motionless, with its wings extended, sunning itself upon the rocks, or the roofs of the houses. When in pain, which is the only time that it is known to make any noise, it utters a sharp cry like that of a rat; and usually disgorges what it has eaten. The flesh of this bird emits a fetid smell that is highly offensive. The manner in which it builds its nest, is perfectly correspondent to its natural indolence: it carelessly places between rocks, or even upon the ground, a few dry leaves or feathers, upon which it lays two eggs of a dirty white.”†

The black vulture is twenty-six inches in length, and four feet four inches in extent; the bill is two inches and a half long, of a dark horn colour as far as near an inch; the remainder, the head, and a part of the neck, are covered with a black, wrinkled, caruncled skin, beset with short black hairs, and downy behind; nostril, an oblong slit; irides, reddish

* Clavigero's *Mexico*, translated by Cullen, vol. i. p. 47. London.

† Hist. Chili, Am. Trans. i. p. 185.

hazel; the throat is dashed with yellow ochre; the general colour of the plumage is of a dull black, except the primaries, which are whitish on the inside, and have four of their broadened edges below of a drab, or dark cream colour, extending two inches, which is seen only when the wing is unfolded; the shafts of the feathers white on both sides; the rest of the wing feathers dark on both sides; the wings, when folded, are about the length of the tail, the fifth feather being the longest; the secondaries are two inches shorter than the tail, which is slightly forked; the exterior feathers, three quarters of an inch longer than the rest; the legs are limy, three inches and a half in length, and, with the feet, are thick and strong; the middle toe is four inches long, side toes, two inches, and considerably webbed, inner toe rather the shortest; claws strong, but not sharp, like those of the *Falco* genus; middle claw, three quarters of an inch long; the stomach is not lined with hair, as reported. When opened, this bird smells strongly of musk.

Mr Abbot informs me, that the carrion crow builds its nest in the large trees of the low wet swamps, to which places they retire every evening to roost. "They frequent," says he, "that part of the town of Savannah where the hog-butchers reside, and walk about the streets, in great numbers, like domestic fowls. It is diverting to see, when the entrails and offals of the hogs are thrown to them, with what greediness they scramble for the food, seizing upon it, and pulling one against another, until the strongest prevails. The turkey buzzard is accused of killing young lambs and pigs, by picking out their eyes; but I believe that the carrion crow is not guilty of the like practices. The two species do not associate."

RAVEN.—CORVUS CORAX.—PLATE LXXV. FIG. 3.

Gmel. Syst. i. p. 364. *Ind. Orn.* p. 150.—Le Corbeau, *Briss.* ii. p. 8, et var. *Buff. Ois.* iii. p. 13. *Pl. Enl.* 495. *Temm. Man. d'Orn.* p. 107.—Raven, *Lath. Gen. Syn.* i. p. 367. *Id. Supp.* p. 74. *Penn. Brit. Zool.* No. 74. *Arct. Zool.* No. 134. *Shaw, Gen. Zool.* vii. p. 341. *Bewick, i.* p. 100. *Low, Fauna Orcadensis,* p. 45. *Peale's Museum,* No. 175.

CORVUS CORAX.—LINNEUS.

Corvus corax, Bonap. Synop. p. 56. *Flem. Br. Anim.* p. 87.—Raven, *Mont. Orn. Dict. and Supp.* p. 67. *Selby, Illust. Br. Orn.* pl. 27.

A KNOWLEDGE of this celebrated bird has been handed down to us from the earliest ages; and its history is almost coeval with that of man. In the best and most ancient of all books, we learn, that at the end of forty days, after the great flood had covered the earth, Noah, wishing to ascertain whether or no the waters had abated, sent forth a raven, which did not return into the ark.* This is the first notice that is taken of this species. Though the raven was declared unclean by the law of Moses, yet we are informed, that, when the prophet Elijah provoked the enmity of Ahab, by prophesying against him, and hid himself by the brook Cherith, the ravens were appointed by Heaven to bring him his daily food.† The colour of the raven has given rise to a similitude, in one of the most beautiful of eclogues, which has been perpetuated in all subsequent ages, and which is not less pleasing for being trite or proverbial. The favourite of the royal lover of Jerusalem, in the enthusiasm of affection, thus describes the object of her adoration, in reply to the following question:—

“What is thy beloved more than another beloved,
O thou fairest among women?”

* Genesis, viii. 7.

† 1 Kings, xvii. 5, 6.

" My beloved is white and ruddy, the chiefest among
Ten thousand. His head is as the most fine gold,
His locks are bushy, and black as a raven !" *

The above-mentioned circumstances taken into consideration, one would suppose that the lot of the subject of this chapter would have been of a different complexion from what history and tradition inform us is the fact. But in every country we are told the raven is considered an ominous bird, whose croakings foretell approaching evil ; and many a crooked beldam has given interpretation to these oracles, of a nature to infuse terror into a whole community. Hence this ill-fated bird, from time immemorial, has been the innocent subject of vulgar obloquy and detestation.

Augury, or the art of foretelling future events by the flight, cries, or motions of birds, descended from the Chaldeans to the Greeks, thence to the Etrurians, and from them it was transmitted to the Romans.† The crafty legislators of those celebrated nations, from a deep knowledge of human nature, made superstition a principal feature of their religious ceremonies, well knowing that it required a more than ordinary policy to govern a multitude, ever liable to the fatal influences of passion ; and who, without some timely restraints, would burst forth like a torrent, whose course is marked by wide-spreading desolation. Hence to the purposes of polity the raven was made

* Song of Solomon, v. 9, 10, 11.

† That the science of augury is very ancient, we learn from the Hebrew law-giver, who prohibits it, as well as every other kind of divination. Deut. chap. xviii. The Romans derived their knowledge of augury chiefly from the Tuscans or Etrurians, who practised it in the earliest times. This art was known in Italy before the time of Romulus, since that Prince did not commence the building of Rome till he had taken the auguries. The successors of Romulus, from a conviction of the usefulness of the science, and at the same time not to render it contemptible by becoming too familiar, employed the most skilful augurs from Etruria to introduce the practice of it into their religious ceremonies. And, by a decree of the senate, some of the youth of the best families in Rome were annually sent into Tuscany to be instructed in this art.—Vide *Cicero. de Divin.* ; also Calmet and the Abbé Banier.

subservient; and the Romans having consecrated it to Apollo, as to the god of divination, its flight was observed with the greatest solemnity; and its tones and inflections of voice were noted with a precision which intimated a belief in its infallible prescience.

But the ancients have not been the only people infected with this species of superstition; the moderns, even though favoured with the light of Christianity, have exhibited as much folly, through the impious curiosity of prying into futurity, as the Romans themselves. It is true that modern nations have not instituted their sacred colleges or sacerdotal orders, for the purposes of divination; but, in all countries, there have been self-constituted augurs, whose interpretations of omens have been received with religious respect by the credulous multitude. Even at this moment, in some parts of the world, if a raven alight on a village church, the whole fraternity is in an uproar; and Heaven is importuned, in all the ardour of devotion, to avert the impending calamity.

The poets have taken advantage of this weakness of human nature; and, in their hands, the raven is a fit instrument of terror. Shakspeare puts the following malediction into the mouth of his Caliban:—

“ As wicked dew as e’er my mother brush’d
With raven’s feather from unwholesome fen,
Drop on you both !” *

The ferocious wife of Macbeth, on being advised of the approach of Duncan, whose death she had conspired, thus exclaims:—

“ The raven himself is hoarse,
That croaks the fatal entrance of Duncan
Under my battlements.” †

* *Tempest*, Act i. scene 2.

† *Macbeth*, Act i. scene 5.

The Moor of Venice says,—

“ It comes o’er my memory,
As doth the raven o’er the infected house,
Boding to all.” *

The last quotation alludes to the supposed habit of this bird’s flying over those houses which contain the sick, whose dissolution is at hand, and thereby announced. Thus Marlowe, in the *Jew of Malta*, as cited by Malone :—

—“ The sad presaging raven tolls
The sick man’s passport in her hollow beak ;
And, in the shadow of the silent night,
Doth shake contagion from her sable wing.”

But it is the province of philosophy to dispel these illusions which bewilder the mind, by pointing out the simple truths which nature has been at no pains to conceal, but which the folly of mankind has shrouded in all the obscurity of mystery.

The raven is a general inhabitant of the United States, but is more common in the interior. On the lakes, and particularly in the neighbourhood of the Falls of the Niagara river, they are numerous ; and it is a remarkable fact, that where they so abound, the common crow (*C. corone*) seldom makes its appearance ; being intimidated, it is conjectured, by the superior size and strength of the former, or by an antipathy which the two species manifest towards each other. This I had an opportunity of observing myself, in a journey during the months of August and September, along the lakes Erie and Ontario. The ravens were seen every day, prowling about in search of the dead fish which the waves are continually casting ashore, and which afford them an abundance of a favourite food ; but I did not see or hear a single crow within several miles of the lakes, and but very few through the whole of the Genesee country.

The food of this species is dead animal matter of all kinds,

* *Othello*, Act. iv. scene 1.

not excepting the most putrid carrion, which it devours in common with the vultures ; worms, grubs, reptiles, and shell-fish, the last of which, in the manner of the crow, it drops from a considerable height in the air on the rocks, in order to break the shells ; it is fond of bird's eggs, and is often observed sneaking around the farm-house in search of the eggs of the domestic poultry, which it sucks with eagerness ; it is likewise charged with destroying young ducks and chickens, and lambs which have been yeaned in a sickly state. The raven, it is said, follows the hunters of deer for the purpose of falling heir to the offal ;* and the huntsmen are obliged to cover their game, when it is left in the woods, with their hunting frocks, to protect it from this thievish connoisseur, who, if he have an opportunity, will attack the region of the kidneys, and mangle the saddle without ceremony.

Buffon says, that “ the raven *plucks out the eyes of buffaloes*, and then, *fixing on the back, it tears off the flesh deliberately* ; and what renders the ferocity more detestable, it is not incited by the cravings of hunger, but by the appetite for carnage ; for it can subsist on fruits, seeds of all kinds, and indeed may be considered as an omnivorous animal.” This is mere fable, and of a piece with many other absurdities of the same romancing author.

This species is found almost all over the habitable globe. We trace it in the north from Norway to Greenland, and hear of it in Kamtschatka. It is common every where in Russia and Siberia, except within the Arctic circle ;† and all through Europe. Kolben enumerates the raven among the birds of the Cape of Good Hope ;‡ De Grandpré represents it as numerous in Bengal, where they are said to be protected for their usefulness ;§ and the unfortunate La Pérouse saw them at Baie

* This is the case in those parts of the United States where the deer are hunted without dogs ; where these are employed, they are generally rewarded with the offal.

† LATHAM.

‡ MEDLEY'S *Kolben*, vol. ii. p. 136.

§ *Voy. in the Indian Ocean*, p. 148.

de Castries, on the east coast of Tartary; likewise at Port des Francois, $58^{\circ} 37'$ north latitude, and $139^{\circ} 50'$ west longitude; and at Monterey Bay, North California.* The English circumnavigators met with them at Nootka Sound,† and at the Sandwich Islands, two being seen in the village of Kakooa; also at Owhyhee, and supposed to be adored there, as they were called Eatooas.‡ Our intrepid American travellers, under the command of Lewis and Clark, shortly after they embarked on the Columbia river, saw abundance of ravens, which were attracted thither by the immense quantity of dead salmon which lined the shores.§ They are found at all seasons at Hudson's Bay;|| are frequent in Mexico;¶ and it is more than probable that they inhabit the whole continent of America.

The raven measures, from the tip of the bill to the end of the tail, twenty-six inches, and is four feet in extent; the bill is large and strong, of a shining black, notched near the tip, and three inches long; the setaceous feathers which cover the nostrils extend half its length; the eyes are black; the general colour is a deep glossy black, with steel-blue reflections; the lower parts are less glossy; the tail is rounded, and extends about two inches beyond the wings; the legs are two inches and a half in length, and, with the feet, are strong and black; the claws are long.

This bird is said to attain to a great age; and its plumage to be subject to change from the influence of years and of climate. It is found in Iceland and Greenland entirely white.

The raven was the constant attendant of Lewis and Clark's party in their long and toilsome journey. During the winter, at Fort Mandan, they were observed in immense numbers,

* *Voy. par I. F. G. De la Pérouse*, ii. p. 129, 203, 443.

† *Cook's Last Voy.* ii. p. 236. Am. ed.

‡ *Idem*, iii. p. 329.

§ *Gass's Journal*, p. 153.

|| *CHARLEVOIX. KALM. HEARNE'S Journey.* ¶ *FERNANDEZ.*

notwithstanding the cold was so excessive, that on the 17th December, 1804, the thermometer stood at 45° below 0.

Like the crow, this species may be easily domesticated, and in that state would afford amusement by its familiarity, frolics, and sagacity. But such noisy and mischievous pets, in common with parrots and monkeys, are not held in high estimation in this quarter of the globe; and are generally overlooked for those universal favourites, which either gratify the eye by the neatness or brilliancy of their plumage, or gladden the ear by the simplicity or variety of their song.

GREAT-FOOTED HAWK—FALCO PEREGRINUS.*

PLATE LXXVI. FEMALE.

Falco peregrinus, *Gmel. Syst.* i. p. 272, 88. *Briss.* i. p. 341, 6, and var. A. *Ind. Orn.* p. 33, No. 72.—*Falco barbarus*, *Linn. Syst.* ed. 10, tom. i. p. 88, No. 6. *Gmel. Syst.* i. p. 272, 8. *Ind. Orn.* p. 33, No. 71.—*Falco hornotinus*, *Briss.* i. p. 324, A.—*Falco niger*, *Id.* p. 327, E.—*Falco maculatus*, *Id.* p. 329, F.—Peregrine falcon, *Lath. Syn.* i. p. 73, No. 52. *Id. Sup.* p. 18. *Penn. Brit. Zool.* No. 48, pl. 20. *Arct. Zool.* No. 97. *Shaw, Gen. Zool.* vol. vii. p. 128. *Montagu, Orn. Dict. and Supp.* *Low, Fauna Orcadensis*, p. 150.—Common falcon, *Lath. Syn.* i. p. 65, No. 49, var. A.; p. 67, var. E.; p. 68, var. F.—Spotted hawk, or falcon, *Edwards*, i. p. 3.—Black hawk, or falcon, *Id.* pl. 4, both from Hudson's Bay.—Le lannier, *Pl. Enl.* 430; old male.—Le faucon noir et passager, *Id.* 469; young female? Le faucon hors, *Id.* p. 470, yearly.—Faucon pèlerin, *Temm. Man. d' Orn.* p. 22. *Peale's Museum*, No. 386; female.

FALCO PEREGRINUS.—LINNÆUS.†

Falco peregrinus, *Bonap. Synop.* p. 27. *North. Zool.* ii. p. 23.—Peregrine falcon, *Selby, Illust. Br. Orn.* pl. 15, p. 37. *Flem. Br. Anim.* p. 49.—*Falco peregrinus*? *Aust. birds in Coll. Linn. Soc. by Vig. and Horsf.* vol. xv. p. 183.

THIS noble bird had excited our curiosity for a long time. Every visit which we made to the coast, was rendered doubly

* It is also a European species.

† Among the *Falconidae* this bird will present that form best adapted for seizing the prey in an open manner by the exercise of their own organs. Noble and bear-

interesting by the wonderful stories which we heard of its exploits in fowling, and of its daring enterprise. There was not

ing in their carriage, the falcons are as much distinguished from the vultures by their graceful proportions, "as those of the lion place him in the ranks of creation above the gaunt, ravenous, grisly, yet dastard wolf." Placed, by their strong and powerful frames, far beyond them in all rapacious powers, they feed nearly exclusively on living prey, despising all upon which they have not themselves acted as executioners, and particularly any carrion, which has the least savour of beginning putrescence. For these purposes they are possessed with a compactly-formed body, the neck comparatively short, and supported by muscles of more than ordinary strength; the feet and thighs remarkably powerful, and the wings of that true hirundine form and texture which points out the greater development of their power. The prey is generally struck while upon the wing with a rapid sweep, and is at once borne off, unless completely above the weight of the assailer, when it is struck to the ground, and dispatched at more leisure.

The peregrine falcon has a considerable geographical range, extending over the whole of temperate Europe, North America, and New Holland. The specimens from the latter country, I may remark, are all smaller in size, but hardly any other distinction can be fixed upon. In Britain, it is abundant on all the rocky coasts towards the north, breeding and frequenting the precipitous headlands; in many districts inland it is also frequent, but the choice of them is more arbitrary and local. The vale of Moffat, in Dumfries-shire, is one of the most favourite stations I am aware of; many pairs breed there, and on the confines of Selkirkshire, choosing their eyries among the precipitous cliffs and streams of that mountainous district; they return to the same rock year after year, and often fix upon the same nest for their breeding-place. When either of the birds are killed, a mate is speedily found by the survivor, and returns with him to the old abode, and some of the eyries there have been known, and handed down to recollection, as far as the annals of the district extend. The Bass rock, and Isle of May in the Frith of Forth, each possess a pair long renowned in deeds of falconry, and the Isle of Man can boast of many a noble bird, whose ancestors have joined in that now nearly-forgotten sport. I am aware of no instance in this country where the peregrine builds on trees, as mentioned by Ord, in America; nor does it seem its true habit there. Dr Richardson remarks, that it is a rare bird in the wooded districts of the fur countries, and the greater part of the specimens which have reached this country have been procured upon the coast.

To the American falcons may be added the merlin *F. esalon*, which was met with by Dr Richardson, who thinks it has been there confounded, from its similarity in some states, with the pigeon hawk. We may also mention a bird described by Mr Audubon as new, under the name of *F. temerarius*, but which appears nothing more than the adult plumage of *F. columbarius*.—ED.

a gunner along the shore but knew it well; and each could relate something of it which bordered on the marvellous. It was described as darting with the rapidity of an arrow on the ducks when on the wing, and striking them down with the projecting bone of its breast. Even the wild geese were said to be in danger from its attacks, it having been known to sacrifice them to its rapacity.

To behold this hero, the terror of the wild-fowl, and the wonder of the sportsman, was the chief object of our wishes. Day after day did we traverse the salt marshes, and explore the ponds and estuaries which the web-footed tribes frequent in immense multitudes, in the hope of obtaining the imperial depredator; even all the gunners of the district were summoned to our aid, with the assurance of a great reward if they procured him, but without success. At length, in the month of December 1812, to the unspeakable joy of Mr Wilson, he received from Egg Harbour a fine specimen of the far-famed duck hawk; which was discovered, contrary to his expectations, to be of a species which he had never before beheld.

If we were to repeat all the anecdotes which have been related to us of the achievements of the duck hawk, they would swell our pages at the expense, probably, of our reputation. Naturalists should be always on their guard when they find themselves compelled to resort to the observations of others, and record nothing as fact which has not been submitted to the temperate deliberations of reason. The reverse of this procedure has been a principal cause why errors and absurdities have so frequently deformed the pages of works of science, which, like a plane mirror, ought to reflect only the genuine images of nature.

From the best sources of information, we learn that this species is uncommonly bold and powerful; that it darts on its prey with astonishing velocity; and that it strikes with its formidable feet, permitting the duck to fall previously to securing it. The circumstance of the hawk's never carrying the duck

off on striking it, has given rise to the belief of that service being performed by means of the breast, which vulgar opinion has armed with a projecting bone, adapted to the purpose. But this cannot be the fact, as the breast-bone of this bird does not differ from that of others of the same tribe, which would not admit of so violent a concussion.

When the water-fowl perceive the approach of their enemy, a universal alarm pervades their ranks ; even man himself, with his engine of destruction, is not more terrible. But the effect is different. When the latter is beheld, the whole atmosphere is enlivened with the whistling of wings ; when the former is recognised, not a duck is to be seen in the air : they all speed to the water, and there remain until the hawk has passed them, diving the moment he comes near them. It is worthy of remark, that he will seldom, if ever, strike over the water, unless it be frozen ; well knowing that it will be difficult to secure his quarry. This is something more than instinct.

When the sportsmen perceive the hawk knock down a duck, they frequently disappoint him of it, by being first to secure it. And as one evil turn, according to the maxim of the multitude, deserves another, our hero takes ample revenge on them, at every opportunity, by robbing them of their game, the hard-earned fruits of their labour.

The duck hawk, it is said, often follows the steps of the gunner, knowing that the ducks will be aroused on the wing, which will afford it an almost certain chance of success.

We have been informed, that those ducks which are struck down, have their backs lacerated from the rump to the neck. If this be the fact, it is a proof that the hawk employs only its talons, which are long and stout, in the operation. One respectable inhabitant of Cape May, told us that he has seen the hawk strike from below.

This species has been long known in Europe ; and in the age of falconry, was greatly valued for those qualifications which rendered it estimable to the lovers and followers of that

princely amusement. But we have strong objections to its specific appellation. The epithet *peregrine*, is certainly not applicable to our hawk, which is not migratory, as far as our most diligent enquiries can ascertain; and, as additional evidence of the fact, we ourselves have seen it prowling near the coast of New Jersey, in the month of May, and heard its screams, which resemble somewhat those of the bald eagle, in the swamps wherein it is said to breed. We have therefore taken the liberty of changing its English name for one which will at once express a characteristic designation, or which will indicate the species without the labour of investigation.*

“This species,” says Pennant, “breeds on the rocks of Llandidno, in Caernarvonshire, Wales.† That promontory has been long famed for producing a generous kind, as appears by a letter, extant in Gloddaeth Library, from the Lord-Treasurer Burleigh, to an ancestor of Sir Roger Mostyn, in which his lordship thanks him for a present of a fine cast of hawks, taken on those rocks, which belong to the family. They are also very common in the north of Scotland, and are sometimes trained for falconry, by some few gentlemen who still take delight in this amusement, in that part of Great Britain. Their flight is amazingly rapid; one, that was reclaimed by a gentleman in the shire of Angus, a county on the east side of Scotland, eloped from its master with two heavy bells attached to each foot, on the 24th September, 1772, and was killed in the morning of the 26th, near Mostyn, Flintshire.”‡

The same naturalist in another place observes, that “*the American species is larger than the European.*§ They are sub-

* “Specific names, to be perfect, ought to express some peculiarity, common to no other of the genus.”—*Am. Orn.* i. p. 65.

† We suspect that Pennant is mistaken; its name denotes that it is not indigenous in Great Britain. Bewick says, “The peregrine, or passenger falcon, is rarely met with in Britain, and consequently is but little known with us.”—*British Birds*, part i.

‡ *British Zoology*.

§ If we were to adopt the mode of philosophizing of the *sapient* Count de Buf-

ject to vary. The black falcon, and the spotted falcon of Edwards, are of this kind ; each preserves a specific mark, in the black stroke which drops from beneath the eyes, down towards the neck.

“ Inhabits different parts of North America, from Hudson’s Bay, as low as Carolina ; in Asia, is found on the highest parts of the Uralian and Siberian chain ; wanders in summer to the very Arctic circle ; is common in Kamtschatka.”*

In the breeding season, the duck hawk retires to the recesses of the gloomy cedar swamps, on the tall trees of which it constructs its nests, and rears its young secure from all molestation. In those wilds, which present obstacles almost insuperable to the foot of man, the screams of this bird, occasionally mingled with the hoarse tones of the heron, and the hooting of the great-horned owl, echoing through the dreary solitude, arouse in the imagination all the frightful imagery of desolation. Mr Wilson, and the writer of this article, explored two of these swamps, in the month of May, 1813, in pursuit of the great heron, and the subject of this chapter ; and although they were successful in obtaining the former, yet the latter eluded their research.

The great-footed hawk is twenty inches in length, and three feet eight inches in extent ; the bill is inflated, short and strong, of a light-blue colour, ending in black, the upper mandible with a tooth-like process, the lower, with a corresponding notch, and truncate ; nostrils round, with a central point like the pistil of a flower ; the eye is large and dark, surrounded with a broad bare yellowish skin, the cartilage over it yellow and prominent ; frontlet, whitish ; the head above, cheeks running off like mustaches, and back, are black ; the wings and scapulars are brownish black, each feather edged with paler, the former long and pointed, reaching almost to the end of the tail ; the primaries and secondaries are marked transversely on the

fon, we should infer that the European species is a *variety of our more generous race, degenerated by the influence of food and climate !*

* *Arctic Zoology.*

inner vanes, with large oblong spots of ferruginous white, the exterior edge of the tip of the secondaries curiously scalloped, as if a piece had been cut out; the tertials incline to ash colour; the lining of the wings is beautifully barred with black and white, and tinged with ferruginous; on a close examination, the scapulars and tertials are found to be barred with faint ash; all the shafts are black; the rump and tail-coverts are light ash, marked with large dusky bars; the tail is round-ing, black, tipped with reddish white, and crossed with eight narrow bars of very faint ash; the chin and breast, encircling the black mustaches, are of a pale buff colour; breast below and lower parts reddish buff, or pale cinnamon, handsomely marked with roundish or heart-shaped spots of black; sides, broadly barred with black; the femorals are elegantly ornamented with herring-bones of black, on a buff ground; the vent is pale buff, marked as the femorals, though with less numerous spots; the feet and legs are of a corn yellow, the latter short and stout, feathered a little below the knees, the bare part one inch in length; span of the foot, five inches, with a large protuberant sole; the claws are large and black, hind claw the largest. Whether the cere is yellow, or flesh-coloured, we were uncertain, as the bird had been some time killed when received; supposed the former.

The most striking characters of this species are the broad patch of black dropping below the eye, and the uncommonly large feet. It is stout, heavy, and firmly put together.

The bird from which the above description was taken, was shot in a cedar swamp in Cape May county, New Jersey. It was a female, and contained the remains of small birds, among which were discovered the legs of the sanderling plover.

CONTINUATION
OF
WILSON'S
AMERICAN ORNITHOLOGY.
BY
CHARLES LUCIAN BONAPARTE.

1847

1848

1849

1850

1851

1852

1853

1854

CONTINUATION

OF

WILSON'S

AMERICAN ORNITHOLOGY.

FORK-TAILED FLYCATCHER.—MUSCICAPA SAVANNA.

PLATE I. FIG. 1.

Muscicapa tyrannus, *Linn. Syst.* i. p. 325, sp. 4. *Gmel. Syst.* i. p. 931, sp. 4. *Lath. Ind.* p. 484, sp. 69.—*Tyrannus savanna*, *Vieill. Ois. de l'Am. Sept.* i. p. 72, pl. 43, (a South American specimen.) *Vieill. Nouv. Dict. d'Hist. Nat.* xxxv. p. 87.—*Muscicapa tyrannus cauda bifurca*, *Briss. Av.* ii. p. 395, sp. 20, pl. 39, fig. 3.—*Le Moucherolle savanna*, *Buff. iv.* p. 557, pl. 26.—*Le Tyran à queue fourchue de Cayenne*, *Buff. Pl. Enl.* 571, fig. 2.—*Fork-tailed flycatcher*, *Penn. Arct. Zool.* sp. 265. *Lath. Syn.* ii. part 1, p. 355, sp. 59. *Phil. Museum*, No. 6620.

MILVULUS SAVANNA.—SWAINSON.*

Tyrannus savanna, *Brand's Journ.* No. lx. p. 282.—*Muscicapa savanna*, *Bonap. Synop.* p. 67.

THOUGH Brisson, Linné, and Pennant, have stated the fork-tailed flycatcher to inhabit this region, as far north as Ca-

* The latter part of the description of this bird will show, that more than one species has been confounded with it; and I am not sure that those very closely allied are yet properly unravelled. The present species has more decidedly marked habits, and will most probably be found entirely restricted to the northern parts of the south continent, and extending slightly, and in small numbers, into the north.

The peculiar form of the tail, and the extreme developement of the organs of flight, induced Mr Swainson to use these birds as typical of a section among the tyrants, to which he has given the characters of, "*Alæ longæ remigum pogoniis*

nada, still the fact seemed more than doubtful, since this bird escaped the researches of Vieillot, and, what is more extraordinary, those of the indefatigable Wilson. It is, therefore, a very gratifying circumstance, that we are able to introduce this fine bird with certainty into the Ornithology of the United States, and by the individual represented in the annexed plate, to remove all doubt on the subject. The specimen from which our drawing was made is a beautiful male, in full plumage; it was shot near Bridgetown, New Jersey, at the extraordinary season of the first week in December, and was presented by Mr J. Woodcraft, of that town, to Mr Titian Peale, who favoured me with the opportunity of examining it.

Brisson published the first account of this bird. That we have rejected the name given by Linné, may appear contrary to our principles; but, in this instance, we certainly have no option, inasmuch as the same name has been very properly retained by Wilson, agreeably to Brisson, for the *Lanius tyrannus* of Linné. Had Linné himself included them both in the same genus, he would doubtless have retained that specific name for the kingbird, which is unquestionably a *Muscicapa*, and not a *Lanius*. As the kingbird is a very abundant species, known to every zoological reader by the name of *Tyrannus*, it is obvious that less inconvenience will be produced by changing the name of an almost unknown species, than would result from altering that of one with which we are so familiar. We have, therefore, adopted Vieillot's specific name of *savanna*, taken by that author from Montbeillard, who, in Buffon's work, thereby endeavoured to commemorate this bird's habit of frequenting inundated savannas. Naturalists who separate *Tyrannus* from *Muscicapa* generically, disagree with respect to the arrangement of this species. For ourselves, we consider the former as a sub-genus of *Muscicapa*, including the larger species, among which our fork-tailed flycatcher must be placed.

internis emarginatis; cauda longissima, forficata;”* and afterwards to give it the rank of a sub-genus, under the title of *Milvulus*, with which will also range the swallow-tailed flycatcher of next plate, *Milvulus longipennis*, &c.; making this curious group to contain at least six or seven known species.—ED.

* See *Monographical Sketch*. Brand's *Journal*, No. LX. p. 282.

This species is fourteen inches long, its tail measuring nearly ten; the extent, from the tip of one wing to that of the other, is fourteen inches. The bill is somewhat more slender and depressed at base than that of the kingbird, and, as well as the feet, is black. The irides are brown. The upper part of the head, including the cheeks and superior origin of the neck, is velvet black. The feathers of the crown are somewhat slender, elevated, and of a yellow orange-colour at base, constituting a fine spot, not visible when they are in a state of repose; the remaining part of the neck above, and the back, are greyish ash; the rump is of a much darker greyish ash, and gradually passes into black, which is the colour of the superior tail-coverts; the inferior surface of the body, from the base of the bill, as well as the under wing and under tail-coverts, is pure white. The wings are dusky, the coverts being somewhat lighter at tip and on the exterior side; the first primary is edged with whitish on the exterior web, and is equal in length to the fourth; the second primary is longest; the three outer ones have a very extraordinary and profound sinus, or notch, on their inner webs, near the tip, so as to terminate in a slender process. The tail is very profoundly forked, the two exterior feathers measuring nearly ten inches in perfect individuals, whilst the two succeeding are but five inches long, and the other feathers become gradually and proportionally shorter, until those in the middle are scarcely two inches in length; the tail is, in fact, so deeply divided, that if the two exterior feathers were removed, it would still exhibit a very forked appearance. All the tail feathers are black, the exterior one on each side being white on the remarkably narrow outer web, and on the shaft beneath, for nearly three-fourths of its length.

I cannot agree with those who say that the female is distinguished from the other sex by wanting the orange spot on the head, as I think we may safely conclude, from analogy, that there is hardly any difference between the sexes. The young birds are readily recognised, by being destitute of that spot, as well as by having the head cinereous, instead of black; the

colour of the whole upper part of the body is also darker, the tail considerably shorter, and the exterior feathers not so much elongated as those of the adult. It is proper to remark, that the elongated tail feathers of the full-grown bird are sometimes very much worn, in consequence of the rapidity with which it passes through the bushes.

Two coloured figures have been given of the fork-tailed flycatcher, the one by Buffon, which is extremely bad, although the rectilinear form of the tail is correctly represented; the other, by Vieillot, which has the exterior tail-feathers unnaturally curved, and, notwithstanding it is preferable to Buffon's figure, yet it is far from being accurate. This author having been unable to procure a North American specimen, chose nevertheless to introduce the species in his *Natural History of North American Birds*, on the authority of former authors, giving a figure from a South American specimen. The error in representing the exterior tail-feathers curved, doubtless arose from the manner in which the dried skin was packed for transportation. That our drawing of this graceful bird is far superior to those above mentioned, will at once be evident on comparison; this superiority is owing to the circumstance of this drawing, like all the others given in the present work, being made from the recent specimen. Buffon's plain figure is a more faithful representation than that given in his coloured engravings.

From the very great rarity of the fork-tailed flycatcher in this region, and the advanced season in which this individual was killed, it is evident that it must have strayed from its native country under the influence of extraordinary circumstances; and we are unable to believe that its wanderings have ever extended as far as Canada, notwithstanding the statements of authors to the contrary. It may be proper to observe, that the difference indicated by Linné and Latham between the variety which they suppose to inhabit Canada, and that of Surinam, appears to have no existence in nature.

Although this bird is so very rare and accidental here, we should be led to suppose it a more regular summer visitant

of the Southern States, were it not impossible to believe that so showy a bird could have escaped the observation of travellers; hence we infer, that the fork-tailed flycatcher must be included in the catalogue of those species which are mere fortuitous visitors to the United States. As but a single specimen of this bird has been obtained, I cannot give any account of its manners and habits from personal observation.

The native country of the fork-tailed flycatcher is Guiana, where it is rather common, and is improperly called *veuve* (widow), from the great length of its tail, in which character only it resembles the African birds of that name.

The habits of the fork-tailed flycatcher resemble those of other species of the same genus. It is a solitary bird, remaining for a long time perched on the limb of a tree, whence it occasionally darts after passing insects; or, flying downwards, it alights on the tufts of herbage which appear above the water, affording it a resting-place in the midst of those partially inundated lands, called savannas, beyond the limits of which it is not frequently seen. While on the tuft, this bird moves its tail in a manner similar to that of the wagtails. Besides insects, the fork-tailed flycatcher feeds occasionally on vegetable substances, as, on dissection, the stomach of our specimen was found to be filled with pokeberries, (*Phytolacca decandra*, L.)

Beyond these particulars, we have no positive knowledge of the manners of our flycatcher, though Vieillot has recorded a history of some length, taken from D'Azara; but the bird observed by the latter author, in Paraguay and Buenos Ayres, though closely allied, appears to be specifically distinct from the one we are describing. Vieillot has since been convinced of this difference, and in the (French) *New Dictionary of Natural History*, he has separated the more southern species, under the name of *Tyrannus violentus*. In colour, that bird strongly resembles our *Muscicapa savanna*, but it is considerably smaller, and has different habits, being gregarious; whilst the *savanna*, as we have already stated, is a solitary bird.

Another species, for which ours may be readily mistaken, is

the *Tyrannus bellulus*, Vieill., which, however, is much larger, with a still longer tail, differing also by having a large black collar extending to each corner of the eye, margining the white throat; and the head of the same bluish-grey colour with the other superior parts of the body; the remaining under parts being of the same colour, with a narrow brown line in the middle of each feather; and by having a whitish line on each side of the head behind the eye, extending to the occiput. The *Tyrannus bellulus* is a native of Brazil.

ROCKY MOUNTAIN ANTCATCHER.—MYIOTHERA
OBSOLETA.—PLATE I. FIG. 2.

Troglodytes obsoleta, Say, in *Long's Expedition to the Rocky Mountains*, vol. ii.
p. 4.—*Philadelphia Museum*, No. 2420.

TROGLODYTES OBSOLETA.—SAY.*

Myiothera obsoleta, Bonap. *Synop.* p. 73.

THIS bird is one of those beings which seem created to puzzle the naturalist, and convince him that nature will never conform to his systems, however perfect his ingenuity may be capable of devising them. This will become sufficiently apparent, when we consider in what manner different authors would have arranged it.

We cannot positively decide whether Vieillot and his followers would have referred this species to *Myrmothera*, a name they have substituted for *Myiothera*; to their genus *Thryothorus*, which we unite to *Troglodytes*; or to their slender-billed section of *Thamnophilus*, rejected by us from that genus, and of which some recent authors have made a genus called *Formicivora*; yet we have very little hesitation in stating our belief, that they would have assigned its place among the species of the latter. According to our classification, it is certainly not

* We prefer retaining this bird for the present in *Troglodytes*. The habits, colour and marking, nest and call of this bird, bring it nearer to the wrens. There is no question, however, of its being an aberrant form, wherever it may rank.—Ed.

a *Thamnophilus*, as we adopt the genus, agreeably to the characters given by Temminck, who, not admitting the genus *Troglodytes*, would undoubtedly have arranged this bird with *Myiothera*, as Illiger would also have done.

The only point, therefore, to be established by us is, whether this bird is a *Myiothera* or a *Troglodytes*. It is, in fact, a link intermediate to both. After a careful examination of its form, especially the unequal length of the mandibles, the notch of the superior mandible, and the length of the tarsus; and after a due consideration of the little that is known relative to its habits, we unhesitatingly place it with *Myiothera*, though, in consequence of its having the bill more slender, long, and arcuated, than that of any other species I have seen, it must occupy the last station in the genus, being still more closely allied to *Troglodytes*, than those species whose great affinity to that genus has been pointed out by Cuvier. This may be easily ascertained, by comparing the annexed representation with the figures given by Buffon and Temminck. The figure which our rocky mountain antcatcher resembles most, is Buffon's *Pl. Enl.* 823, fig. 1, (*Myiothera lineata*.) The colours of our bird are also similar to those of a wren; but this similitude is likewise observed in other *Myiotheræ*.

The bird now before us was brought from the Arkansawriver, in the neighbourhood of the Rocky Mountains, by Major Long's exploring party, and was described by Say under the name of *Troglodytes obsoleta*, from its close resemblance to the Carolina wren (*Troglodytes Ludovicianus*), which Wilson considered a *Certhia*, and Vieillot a *Thryothorus*.

As the rocky mountain antcatcher is the first and only species hitherto discovered in North America, we shall make some general observations on the peculiarities of a genus thus introduced into the Fauna of the United States.

Buffon first formed a distinct group of the antcatchers, under the name of *Fourmiliers*, and considered them as allied to his *Brèves*, now forming the genus *Pitta* of Vieillot, they having been previously placed in that of *Turdus*. Lacépède adopted that group as a genus, and applied to it the name of *Myrme-*

cophaga. Illiger added such species of the genus *Lanius* of Linné and Latham, as are destitute of prominent teeth to the bill, and gave to the genus, thus constituted, the name of *Myiothera*; rejecting Lacépède's designation, as already appropriated to a genus of mammalia.

Cuvier perceived that some of the *Fourmiliers* of Buffon were true thrushes; but he retained the remainder as *Myiotheræ*, among which he also included the *Pittæ*. Vieillot, besides the *Pittæ*, removed some other species, in order to place them in his new genera *Conopophaga* and *Thamnophilus*, giving the name of *Myrmothera* to the remaining species, with the exception of the *Myiothera rex*, for which he formed a distinct genus, with the name of *Grallaria*. We agree with Vieillot, in respect to the latter bird; but, as regards the other species, we prefer the arrangement of Temminck, who has adopted the genus *Myiothera* nearly as constituted by Illiger, including some of the slender-billed *Thamnophili* of Vieillot, of which our *Myiothera obsoleta* would probably be one, as above stated.

The genus thus constituted contains numerous species, which inhabit the hottest parts of the globe; a greater number of them existing in South America than elsewhere. For the sake of convenience, several sections may be formed in this genus, founded on the characters of the bill, tail, and tarsus; but as we have only one species, it does not rest with us to make divisions; and we shall merely remark, that our *obsoleta* is referable to the last section, consisting of those whose bills are the most slender, elongated, and arcuated, in company with the *Turdus lineatus* of Gmelin.

The antcatchers may justly be enumerated amongst the benefactors of mankind, as they dwell in regions where the ants are so numerous, large, and voracious, that, without their agency, co-operating with that of the *Myrmecophaga jubata*, and a few other ant-eating quadrupeds, the produce of the soil would inevitably be destroyed in those fertile parts of the globe. The ant-hills of South America are often more than twenty feet in diameter, and many feet in height. These wonderful

edifices are thronged with two hundred fold more inhabitants, and are proportionally far more numerous, than the small ones with which we are familiar. Breeding in vast numbers, and multiplying with great celerity and profusion, the increase of these insects would soon enable them to swarm over the greatest extent of country, were not their propagation and diffusion limited by the active exertions of that part of the animal creation, which continually subsist by their destruction.

The antcatchers run rapidly on the ground, alighting but seldom on trees, and then on the lowest branches; they generally associate in small flocks, feed exclusively on insects, and most commonly frequent the large ant-hills before mentioned. Several different species of these birds are often observed to live in perfect harmony on the same mound, which, as it supplies an abundance of food for all, removes one of the causes of discord which is most universally operative throughout animated nature. On the same principle, we might explain the comparative mildness of herbivorous animals, as well as the ferocity and solitary habits of carnivorous, and particularly of rapacious animals, which repulse all others from their society, and forbid even their own kind to approach the limits of their sanguinary domain.

The antcatchers never soar high in the air, nor do they extend their flight to any great distance without alighting to rest, in consequence of the shortness of their wings and tail, which, in fact, seem to be seldom employed for any other purpose than to assist them in running along the ground, or in leaping from branch to branch of bushes and low trees,—an exercise in which they display remarkable activity. Some species, like the woodpeckers, climb on the trunks of trees in pursuit of insects; and it would appear, from their restless habits and almost constant motion, that their limited excursions are entirely attributable to the want of more ample provision for flight. The antcatchers are never found in settled districts, where their favourite insects are generally less abundant; but

they live in the dense and remote parts of forests, far from the abodes of man and civilisation. They also dislike open and wet countries.

The note of the antcatchers is as various as the species are different; but it is always very remarkable and peculiar. Their flesh is oily and disagreeable to the taste; and, when the bird is opened, a very offensive odour is diffused, from the remains of half-digested ants and other insects, contained in the stomach.

The plumage of the antcatchers very probably undergoes considerable changes in colour. The size of the sexes is different, the female being much larger than the male. Such variations may have induced naturalists to consider many as species, that really do not exist, as such, in nature.

The nest of these birds is hemispherical, varying in magnitude according to the size of the species, composed of dried grass, rudely interwoven; it is fixed to small trees, or attached by each side to a branch, at the distance of two or three feet from the ground. The eggs are nearly round, and three or four in number.

The discovery of any species of this genus in the old world is quite recent, and it had previously been believed, that the genus was peculiar to South America; and though the existence of ant-destroying birds was suspected in other tropical regions, they were supposed to be generically distinct from those of the corresponding parts of America, as was known to be the fact in the case of the ant-eating quadrupeds. This opinion was founded on the admitted axiom, that nature always varies her groups in remote tropical regions having no communication with each other. The reverse, however, is the fact, in the case of the ant-catching birds, as we find perfect analogies between the species residing in those distant parts of the globe, even throughout the different sections into which the genus may be divided.

The rocky mountain antcatcher is six inches long. The bill, measured from the corner of the mouth, is more than one inch in length, being slightly curved almost from the base; it is very

slender, being nearly two-eighths of an inch in diameter at the base, and only the sixteenth of an inch in the middle, whence it continues to diminish to the tip ; and is of a dark horn colour, paler beneath. The feet are dusky ; and the length of the tarsus is seven-eighths of an inch. The irides are dark brown ; the whole plumage above is of a dusky brownish, slightly undulated with pale, tinted with dull ferruginous on the top of the head and superior portions of the back. The sides of the head are dull whitish, with a broad brown line passing through the eye to the commencement of the neck. The chin, throat, and breast, are whitish, each feather being marked by a longitudinal line of light brown. The belly is white ; and the flanks are slightly tinged with ferruginous. The primaries are entirely destitute of undulations or spots ; the tail-coverts are pale, each with four or five fuscous bands ; the inferior tail-coverts are white, each being bifasciate with blackish brown. The tail is nearly two inches long, rounded, broadly tipped with ferruginous yellow, and having a narrow black band before the tip : the remaining part of the tail is of the same colour with the wings, and is obsoletely banded, these bands being more distinct on the two middle feathers, which are destitute of the black and yellowish termination ; the exterior feather is dusky at tip, marked by four yellowish-white spots on the exterior, and by two larger ones on the inner web.

The specimen of the rocky mountain antcatcher we are describing, is a male, shot in the month of July, and possibly not adult. As it is the only one brought by Major Long's party, we cannot determine the extent or nature of the variations the species may undergo from age, sex, or season.

The note of this bird is peculiar, resembling the harsh voice of the terns. It inhabits the sterile country bordering on the river Arkansaw, in the neighbourhood of the Rocky Mountains, where it is frequently observed hopping on the ground, or flitting among the branches, and weather-beaten, half-reclining trunks of a species of juniper : when it flies among the crooked limbs of this tree, it spreads its tail considerably, but was never

seen to climb. They were generally observed in small associations of five or six individuals, perhaps composing single families.

FEMALE GOLDEN-WINGED WARBLER.—SYLVIA CHRYSOPTERA.—PLATE I. FIG. 3.

See *Wilson's American Ornithology*, ii. p. 113, pl. 15, fig. 5, for the male.—*Motacilla chrysoptera*, *Linn. Syst.* i. p. 333, sp. 20. *Gmel. Syst.* i. p. 971, sp. 20, (male).—*Sylvia chrysoptera*, *Lath. Ind.* p. 541, sp. 123. *Vicill. Ois. de l'Am. Sept.* ii. p. 37, pl. 97, (male).—*Motacilla flavifrons*, *Gmel. Syst.* i. p. 976, sp. 126, (male).—*Sylvia flavifrons*, *Lath. Ind.* p. 527, sp. 69, (male).—*Ficedula Pennsylvanica cinerea gutture nigro*, *Brisson, Av. suppl.* p. 109, sp. 80, (male).—*Figuier aux ailes dorées*, *Buff. Ois.* v. p. 311, (male).—Golden-winged Flycatcher, *Edwards, Glean.* ii. p. 189, pl. 299, (male).—Gold-winged Warbler, *Penn. Arct. Zool.* sp. 295. *Lath. Syn.* ii. part 2, p. 492, sp. 118, (male).—Yellow-fronted Warbler, *Penn. Arct. Zool.* sp. 296. *Lath. Syn.* ii. part 2, p. 461, sp. 67, (male).—*Parus alis aureis*, the Golden-winged Flycatcher, *Bartram, Trav.* p. 292, (male). *Philadelphia Museum*, No. 7010, male; No. 7011, female.

VERMIVORA CHRYSOPTERA.—SWAINSON.

Male, Vol. I. p. 259.

THE female of this pretty little warbler, hitherto unknown to any naturalist, is now figured and described for the first time. For the opportunity of presenting it to the reader, we are indebted to Mr Titian Peale, who shot it on the 24th of May, near Camden, New Jersey; and, with his usual kindness and zeal for natural history, communicated it to us for this work.

This little warbler differs so materially from its mate, as to require a distinct figure and description, in order to be recognised; yet we cannot fail to perceive a kind of family resemblance between the sexes; and, by comparing the two descriptions and accompanying figures, our readers will agree with us that they are but one and the same species, in a different garniture of plumage. The distribution of markings is really

similar in both sexes ; but in the female the colours are paler, and green prevails on those parts which, in the male, are of a dark slate colour.

The female of the golden-winged warbler is four and a half inches long. The bill is blackish, straight, entire, rounded, and gradually tapering to a sharp point. The feet are brownish ash ; the irides, dark brown. The front is golden yellow ; the top of the head, bright olive yellow ; the back of the head, and superior parts of the neck and body, are of a pale plumbeous hue, the feathers being tipped with yellow olive, more particularly on the rump ; the superior tail-coverts are pure pale plumbeous. A wide slate-coloured stripe passes through the eye from the bill, and dilates on the cheeks ; this is margined by a white line above the eye, and by a wider one on each side of the throat. The throat is of a pale slate colour, becoming still paler on the breast. The remaining under parts are whitish, occasionally tinged with yellow, and with slate colour on the flanks. The wings are of the same colour as the back, but somewhat darker, and are crossed by two wide bands of bright yellow, formed by the tips of the first and second rows of wing-coverts. The primaries are dusky, margined on the exterior web with pale, and on the inner broadly with white. The secondaries are broadly margined with yellow olive on the outer web, and with white on the inner web. The tail is nearly even at tip, of a dusky plumbeous colour ; the three lateral feathers have a large pure white spot on the inner web.

This last essential character also exists in the male, though Wilson has not mentioned it. As to the manners and habits of the species, he has given us no information, except that it is rare, and remains only a few days in Pennsylvania. He says nothing of the female, and Vieillot never saw it.

We regret that we are unacquainted with the form of its nest, and the peculiarity of its song. We can only state, that during its short stay in Pennsylvania, it is solitary and silent, gleaning amongst the branches of trees, and creeping much after the manner of the titmouse, with its head frequently

downwards, in pursuit of larvæ and insects, which constitute exclusively the food of this species.

Wilson was impressed with the opinion, that the shape of the bill would justify the formation of a distinct sub-genus, which would include this bird, the *Sylvia vermivora*, and some other species. In this opinion Cuvier has coincided, by forming his sub-genus *Dacnis*, which he places under his extensive genus *Cassicus*, remarking that they form the passage to *Motacilla*. This sub-genus we shall adopt, but we differ from Cuvier by arranging it under *Sylvia*; it will then form the transition to the more slender-billed *Icteri*. Temminck and Vieillot have arranged them also under *Sylvia*; the latter author, in the (French) *New Dictionary of Natural History*, gives them the name of pitpits; and it is most probably from want of examination, that he has not considered the present bird as belonging to that section.*

* The opinion of Wilson, now mentioned by his continuator, shows the accurate perception he had of the generic forms and modifications of birds; the subdivision he mentions has actually been made by various ornithologists. Holding different views, we certainly also prefer placing it among the *Sylviadae*, but it may lead off in other directions according to the ideas of the systematist, and the mode of analysis he pursues. *Vermivora* is now retained on account of, as far as we are aware, the more restricted form.—En.

SWALLOW-TAILED FLYCATCHER.—MUSCICAPA FORFICATA.—PLATE II. FIG. 1.

Muscicapa forficata, *Gmel. Syst.* i. p. 931, sp. 22. *Lath. Ind.* p. 485. sp. 70. *Vieill. Ois. de l'Am. Sep.* i. p. 71. *Stephens, Cont. of Shaw's Zool.* xx. p. 413, pl. 3.—*Tyrannus forficatus*, *Say, in Long's Expedition to the Rocky Mountains*, ii. p. 224.—*Moucherolle à queue fourchue du Mexique*, *Buff. Ois.* iv. p. 564.—*Gobe-mouche à queue fourchue du Mexique*, *Buff. Pl. Enl.* 677.—Swallow-tailed Flycatcher, *Lath. Syn.* ii. part i. p. 356. sp. 50.—*Philadelphia Museum*, No. 6623.

MILVULUS FORFICATUS.—SWAINSON.

Muscicapa forficata, *Bonap. Synop.* p. 67.

THIS rare and beautiful bird is, I believe, now figured from nature for the second time ; and, as the plate given by Buffon conveys but an imperfect idea of its characters, the representation in the accompanying engraving will certainly prove the more acceptable to naturalists. That author had the merit of publishing the first account of this species ; and the individual he described was received from that part of Louisiana which borders on Mexico. Neither Latham, Gmelin, nor Vieillot, seem to have had an opportunity of examining this bird, as they have evidently drawn on Buffon for what they have said relative to it. Hence it appears that the swallow-tailed flycatcher has never been obtained from the time of Buffon to the period of Major Long's expedition to the unexplored region it inhabits. The specimen before us, which is a fine adult male, was shot by Mr Titian Peale, on the 24th of August, on the Canadian fork of the Arkansaw river.

Although this bird is very different from the fork-tailed flycatcher, yet, on account of the form of the tail, and the similarity of the common name, they are apt to be mistaken for each other, and, when both are immature, some caution is required to avoid referring them to the same species. Notwithstanding this similarity, some authors have placed the fork-tailed flycatcher in their genus *Tyrannus*, and the present

bird in *Muscicapa*, whereas, from an inspection of the bills, it will at once be seen, that the latter would be still more properly placed in their genus *Tyrannus*, as the form of its bill is exactly the same with that of the kingbird, the type of the sub-genus.

The swallow-tailed flycatcher, when in full plumage, is eleven inches long. The bill and feet are blackish; the irides are brown (red, according to authors). The upper part of the head and neck is of a light grey; the back and scapulars are dark cinereous, tinged with reddish brown; the rump is of the same colour, but strongly tinged with black, and the superior tail-coverts are deep black; the under part of the body is milk white, the flanks being tinged with red; the inferior tail-coverts are pale rosaceous; the wings are brownish black, the upper coverts and secondaries being margined externally, and at tip with dull whitish; the under wing-coverts are whitish rosaceous; the axillary feathers, above and beneath, are of a vivid scarlet colour. The tail is greatly elongated and excessively forked; it is of a deep velvet black colour, each feather having the terminal margin of a dull whitish tint, and the shafts white at their bases. The three exterior feathers on each side are of a delicate pale rosaceous colour on a considerable part of their length from the base. The external one is five inches and a half long; the second and third gradually decrease in length, but the fourth is disproportionately shorter, and from this feather there is again a gradual decrease to the sixth, which is little more than two inches long.

The female of the swallow-tailed flycatcher is probably very similar to the male, but the colours of the young bird are much less vivid, and the exterior tail-feathers are much shorter than those of the adult.

The swallow-tailed flycatcher is as audacious as the kingbird, attacking with unhesitating intrepidity, and turning the flight of the most powerful of the feathered tribe. Its note consists of a chirping, sounding like *tsch, tsch*, much resembling that of the prairie dog (*Arctomys ludoviciana*, Ord), by

which it deceived the members of Long's party into a belief that they were approaching one of the villages of this animal.

"A note, like that of the prairie dog," (writes Say,) "for a moment induced the belief that a village of the marmot was near, but we were soon undeceived by the appearance of the beautiful *Tyrannus forficatus* in full pursuit of a crow. Not at first view recognising the bird, the fine elongated tail plumes occasionally diverging in a furcate manner, and again closing together, to give direction to the aerial evolutions of the bird, seemed like extraneous processes of dried grass, or twigs of a tree, adventitiously attached to the tail, and influenced by currents of wind. The feathered warrior flew forward to a tree, whence, at our too near approach, he descended to the earth, at a little distance, continuing at intervals his chirping note. This bird seems to be rather rare in this region; and, as the very powder within the barrels of our guns was wet, we were obliged to content ourselves with only a distant view of it."

The range of the swallow-tailed flycatcher appears to be limited to the trans-Mississippian territories, lying on the south-western frontier of the United States, more especially frequenting the scanty forests, which, with many partial, and often total interruptions, extend along the Arkansaw, Canadian, and Platte rivers, where in some districts they do not seem to be very uncommon.

ARKANSAW FLYCATCHER.—MUSCICAPA VERTICALIS.

PLATE II. FIG. 2.

Tyrannus verticalis, Say, in *Long's Expedition to the Rocky Mountains*, ii. p. 60.—
Philadelphia Museum, No. 6624.

TYRANNUS VERTICALIS.—SAY.

Muscicapa verticalis, Bonap. *Synop.* p. 67.

THIS bird, brought from the Rocky Mountains by Major Long's exploring party, is so closely allied to many imperfectly described species of the extensive genus to which it be-

longs, that ornithologists, at first sight, may very reasonably doubt its pretensions to rank as a new species. But, notwithstanding any doubt that may be produced by its similarity to others, it is certainly an addition to the already numerous catalogue of flycatchers.

The total length of the Arkansaw flycatcher is eight inches. The bill is similar to that of the crested flycatcher, but is more rounded above, and more abruptly inflected at tip, being of a blackish colour, as well as the feet. The head above, and nucha, are pure pale plumbeous; the crown has a restricted bright orange spot in the middle, invisible when the feathers are at rest; there is a dusky spot between the bill and eyes. The cervix and back are pale plumbeous, tinged with olivaceous, and deepening on the rump almost to blackish, which is the colour of the superior tail-coverts. The chin is whitish; the throat and upper part of the breast are of the same colour as the head, but paler; the remaining under surface, including the inferior wing and tail-coverts, is yellow. The wings are brown, the secondaries being margined exteriorly with whitish; the inner webs of the primaries are whitish towards the base, and near the tips they are narrowed; the first is remarkably so, being almost falciform. The tail is of a deep brown black colour, and very slightly emarginated; the exterior feather is white on the outer web, the shaft being white on the exterior half, and brown on the interior.

Say first described and named this bird in the second volume of the work above quoted; and he remarks that it is allied to the *Tyrannus griseus* and *Tyrannus sulphuratus* of Vieillot. There are many species for which the Arkansaw flycatcher might more readily be mistaken; of these we may mention the crested flycatcher (*Muscicapa crinita*), so well described and figured by Wilson in his second volume; and particularly the *Muscicapa ferox** of Gmelin, a South American bird, the description of

* This bird had been incorrectly considered by Vieillot, in his *Natural History of North American Birds*, as identical with the *Muscicapa crinita*, but, afterwards perceiving it to be a distinct species, he named it *Tyrannus ferox*. A spe-

which agrees so well with the species we are now considering, that it might be equally applied to either. Our bird differs from the two latter by that striking character, the white exterior web of the outer tail-feather. From the *crinita*, it may more especially be known by the spot on the crown, which does not exist in that species; by not having the tail and wing-feathers rufous in any part; and by having the primaries narrowed at tip, while the *crinita* has them quite large, entire, and rounded. On a particular comparison with the *ferox*, we shall perceive that the bill of that bird is flattened, broad, and carinate, whilst in the *verticalis* it is almost rounded above. The general colour of the latter is, besides, much paler, and the tail is less deeply emarginated.

The Arkansaw flycatcher appears to inhabit all the region extending west of the Missouri river. The specimen we have been describing is a male, killed in the beginning of July, on the river Platte, a few days' march from the mountains.

SAY'S FLYCATCHER.—MUSCICAPA SAYA.—PLATE II. FIG. 3.

Philadelphia Museum, No. 6831.

TYRANNULA SAYA.—SWAINSON.*

Muscicapa Say, *Bonap. Synop.* p. 67.—*Tyrannula pallida*, *Sw. Synop. Mex. Phil. Mag.* No. 15.—*Tyrannula* Say, *North. Zool.* ii. p. 142.

WE now introduce into the Fauna of the United States a species which is either a nondescript, or one that has been im-

cimen is, in the Philadelphian Museum, designated by the fanciful name of ruby-crowned flycatcher, (with this Say compared his *Tyrannus verticalis* before he stated it to be new,) and in the New York Museum three specimens are exhibited with the erroneous title of whiskered flycatcher (*Muscicapa barbata*.)

* One or two specimens of this apparently uncommon bird were procured by the overland Arctic expedition, agreeing generally with the birds now described. Mr Swainson has received it from Mexico.—ED.

properly named; and I dedicate it to my friend Thomas Say, a naturalist of whom America may justly be proud, and whose talents and knowledge are only equalled by his modesty. The specimen now before us is a male, shot by Mr T. Peale, on the 17th of July, near the Arkansaw river, about twenty miles from the Rocky Mountains.

We cannot be perfectly sure that this flycatcher has not heretofore been noticed, since we find in the books, two short and unessential descriptions which might be supposed to indicate it. One of these is the *Muscicapa obscura* of Latham, (dusky flycatcher of his *Synopsis*,) from the Sandwich Islands; but, besides the difference of the tail-feathers, described as acute in that bird, the locality decides against its identity with ours. The other description is that of a bird from Cayenne, the *Muscicapa obscura* of Vieillot,* given by that author as very distinct from Latham's, although he has applied the same name to it, no doubt inadvertently. This may possibly be our bird; but, even in this case, the name we have chosen will necessarily be retained, as that of *obscura* attaches to Latham's species by the right of priority.

This flycatcher strongly resembles the common pewee (*Muscicapa fusca*), but differs from that familiar bird by the very remarkable form of the bill; by the colour of the plumage, which verges above on cinnamon brown, instead of greenish, and beneath is cinereous and rufous, instead of yellowish ochreous; and by the proportional length of the primary feathers, the first being longer than the sixth in our bird, whereas it is shorter in the pewee.

The total length of Say's flycatcher is seven inches; the bill is long, straight, and remarkably flattened; the upper mandible is blackish, and but very slightly emarginated; the lower mandible is much dilated, and pale horn colour on the disk. The feet are blackish; the irides are brown. The general colour of the whole upper parts is dull cinnamon brown,

* *Nouv. Dict. d'Hist. Nat.* xxi. p. 451.

darker on the head; the plumage at base is of a lead colour. The throat and breast are of the same dull cinnamon tint, gradually passing into pale rufous towards the belly, which is entirely of the latter colour; the under wing-coverts are white, slightly tinged with rufous. The primaries are dusky, tinged with cinnamon, and having brown shafts; they are considerably paler beneath. The first primary is a quarter of an inch shorter than the second, which is nearly as long as the third; the third is longest; the fourth and fifth gradually decrease, and the sixth is decidedly shorter than the first. The tail is hardly emarginated, and of a blackish brown colour.

We know nothing of the habits of this flycatcher, except what has been communicated by Mr T. Peale, from his manuscript notes. The bird had a nest in July, the time when it was obtained; its voice is somewhat different from that of the pewee, and first called attention to its nest, which was built on a tree, and consisted chiefly of moss and clay, with a few blades of dried grass occasionally interwoven. The young birds were, at that season, just ready to fly.

FEMALE GOLDEN-CROWNED GOLD-CREST.—REGULUS
CRISTATUS.—PLATE II. FIG. 4.

Wilson's American Ornithology, i. p. 126, pl. 8, fig. 2, for the male.—*Motacilla regulus*, *Linn. Syst.* i. p. 338, sp. 48. *Gmel. Syst.* i. p. 995, sp. 48.—*Sylvia regulus*, *Lath. Ind.* p. 548, sp. 152. *Temm. Man. d'Orn.* p. 229. *Ranzani, Elem. di Zool.* iii. part 5, p. 105, pl. 16, fig. 3.—*Regulus cristatus*, *Ray, Syn.* p. 79, sp. 9. *Aldr. Orn.* ii. p. 649. *Will. Orn.* p. 163, pl. 42. *Vieill. Nouv. Dict. d'Hist. Nat.* xxix. p. 420.—*Regulus vulgaris*, *Stephens, Cont. of Shaw's Zool.* xx. p. 758, pl. 59.—*Parus calendula*, *Regulus cristatus vulgo dicta*, *Briss. Av.* iii. p. 579, sp. 17.—*Le Roitelet*, *Gerardin, Tabl. Elem. d'Orn.* i. p. 318, sp. 26, pl. 15, (not of *Buff. Ois.* v. pl. 363, pl. 16, fig. 2, nor *Pl. Enl.* 651, fig. 3, which represent *Sylvia ignicapilla* of *Brehm*.)—*Regolo*, *Storia degli uccelli*, iv. pl. 390.—*Gold-crested Wren*, *Lath. Syn.* ii. part 2, p. 508, sp. 145. *Penn. Brit. Zool.* sp. 153. *Penn. Arct. Zool.* sp. 321.—*Golden-crowned Wren*, *Edw. Glean.* v. p. 95, pl. 254, lower fig. male. *Philadelphia Museum*, No. 7246, male; No. 7247, female.

REGULUS REGULOIDES.—JARDINE.*

For male and note, see vol. i. p. 127.

Two distinct species of gold-crest have been, until lately, considered by naturalists as but one. Are they both inhabitants of this continent? and, if not, which is the American species? These questions cannot be readily answered, since we have nothing better than negative evidence to offer relative to the first. The present female, however, is decisive as to which of them inhabits this country, and we have therefore concluded, that the faithful representation in the accompanying plate will be acceptable to ornithologists. A slight inspection of this specimen leaves no doubt as to its being the female of the *Regulus cristatus*; and, should the *Regulus ignicapillus*,

* For the distinctions of the American bird, and the true *R. cristatus*, see as noted above. The Prince of Musignano is now aware of the distinctions between the American and British species, which he will himself detail hereafter. The *R. ignicapillus* has not yet been discovered in America, unless the bird which Mr Audubon has figured as *R. Cuverii* may prove to be it; but which it is impossible to determine from the plate alone.—Ed.

contrary to our expectations, also prove to be an inhabitant of this country, it will appear, along with its mate, in another volume of this work. All the ornithologists state, that the latter is a native of this continent, whilst they take no notice whatever of the *Regulus cristatus*, which, if not the only indigenous, is certainly the more common species. This error seems to have originated with Vieillot, who, considering the two species as but one, probably was not careful in selecting the individual from which his drawing was made; he may, therefore, have chosen an European bird, and unluckily of the other species, as both are found in Europe.

However this may be, his figure is certainly that of the *ignicapillus*; and it is equally obvious, that his short description of the female can only apply to the female of the *cristatus*, which corroborates my opinion. In the (French) *New Dictionary of Natural History*, Vieillot distinguishes two varieties of *Regulus cristatus*, and again describes the *ignicapillus* as the one he saw in America. If this observation could be relied upon, we should admit that both species are inhabitants of this country, although the present, which must be by far the most numerous, is certainly not the *ignicapillus*.

I agree with Ray, Vieillot, and other authors, and dissent from Linné, Latham, Wilson, and Temminck, respecting the propriety of placing these birds in a separate genus from *Sylvia*, and I have therefore changed the generic name adopted by Wilson. This genus forms a link intermediate to the genera *Sylvia* and *Parus*. It is small both in the number and size of its species, consisting of the two smallest of the European birds, one of which is the subject of this article; an American species, the ruby-crowned gold-crest, (*Regulus calendulus*), so well figured and described by Wilson; and a fourth from Asia.

The most obvious characters that distinguish the genus *Regulus* from *Sylvia* are, the bill remarkably slender throughout, and two small decomposed feathers, directed forwards so as to cover the nostrils.

The habits of the gold-crests resemble, in many respects, those of the titmouse. They delight in cold weather, and then often perch on evergreen trees. They display great activity and agility in search of their food, being almost constantly in motion, hopping from branch to branch, or climbing on trees, frequently with the head downwards, searching the chinks of the bark for their prey. These little birds commonly feed on the smallest insects, which they catch adroitly while on the wing. In the winter, they seek them in their retreats, where they lie torpid or dead. They are also very expert at finding larvæ and all sorts of small worms, of which they are so fond as to gorge themselves exceedingly. During summer, they occasionally eat little berries and small grains. In autumn, they are fat, and fit for the table, notwithstanding their very diminutive size. The species we are describing, is found in great quantities in the neighbourhood of Nuremberg, in Germany, and sold in the markets of that city, where they command a high price.

Wilson, in his account of the present species, observes, that “the very accurate description given by the Count de Buffon, agrees, in every respect, with ours.” Notwithstanding this observation, Buffon’s plate and description designate the *ignicapillus* beyond the possibility of doubt; whilst those of Wilson are intended for the *cristatus*.

This statement of Wilson, joined to the testimony of Vieillot, would have led us to believe the *ignicapillus* to be an American bird, if Wilson’s plate, and more especially his description, as well as the inspection of the very individual he delineated, and a hundred others, had not confirmed our own belief. It may, however, be considered extraordinary, that so diminutive a being should extend its range so widely, as to participate equally in the bounties of two continents; and that another, so closely allied to it, as to be generally mistaken for a mere variety, should be limited in its wanderings by the boundaries of but one.

That the reader may be assured of the specific difference

between these two birds, I add a short comparative description. The *Regulus cristatus* has the bill very feeble, and quite subulate; whilst that of the *ignicapillus* is also subulate, but is wider at base. The cheeks of the former are pure cinereous, without any white lines, having only a single blackish one through the eye; those of the latter, in addition to the black line through the eye, have a pure white one above, and another below, whence Temminck calls it *Roitelet triple bandeau*. The English name also may be derived from this character, or the bird may rather be called fire-crowned gold-crest, from its Latin name. The crest of the male golden-crowned gold-crest is yellowish orange, that of the fire-crowned is of the most vivid orange; but the most obvious difference is between the females, that of the golden-crowned having a lemon yellow crest, which, in the female of its congener, is orange, like that of the male, only much less vivid. The cheek bands of the female fire-crowned are by no means so obvious as in its mate; thus the female of this species resembles the male golden-crowned, than which the colours of its crest are not less brilliant. If, to these traits, we add, that the latter is a little larger, we shall complete the enumeration of their differences.

The two species are also somewhat distinguished by their manner of living. The golden-crowned gold-crest associates in small bands, consisting of a whole family, whilst the fire-crowned is only observed in pairs. The latter is more shy, and frequents the tops of the highest trees; whereas the former is more generally observed amongst low branches and bushes; the voice of the fire-crowned gold-crest is also stronger. Their nests, however, are both of the same admirable construction, having the entrance on the upper part; but the eggs are different in colour, and those of the fire-crowned are fewer in number.

The female golden-crowned gold-crest is three inches and three quarters long, and six in extent. The bill is black; the feet dusky; the toes and nails wax colour; the irides are dark brown. The frontlet is dull whitish grey, extending in a line

over and beyond the eye; above this is a wide black line, confluent on the front, enclosing on the crown a wide longitudinal space of lemon yellow, erectile, slender feathers, with dis-united webs; a dusky line passes through the eye, beneath which is a cinereous line, margined below by a narrow dusky one. The cervix and upper part of the body are dull olive green, tinged with yellowish on the rump. The whole inferior surface is whitish; the feathers, like those of the superior surface, being blackish-plumbeous at base. The lesser and middling wing-coverts are dusky, margined with olive green, and tipped with whitish; the greater coverts are dusky, the outer ones immaculate, the inner ones have white tips, which form a band on the wings. The inferior wing-coverts, and all the under surface of the wings, are more or less whitish grey; the primaries are dusky, with a narrow greenish yellow outer margin, wider at base, and attenuated to the tip, where it is obsolete. The secondaries are dusky; on the outer web, they are whitish near the base, then black, then with a greenish yellow margin, extending nearly to the tip; the margin of the inner web is white; the secondaries nearest to the body are, moreover, whitish on the terminal margin. The tail is emarginated; the feathers are dusky olive green on the margin of the outer web; the inner margins, with the exception of the two middle ones, are whitish.

Until their first moult, the young of both sexes are much like the adult female, except in being destitute of the yellow spot on the crest, which is greenish olive. In this state, however, they are not seen here, as they breed farther to the north, and moult before their arrival in the autumn.

YELLOW-HEADED TROOPIAL.—ICTERUS ICTEROCEPHALUS.—PLATE III. FIG. 1, MALE; FIG. 2, FEMALE.

Oriolus Icterocephalus, *Linn. Syst.* i. p. 163, sp. 16. *Gmel. Syst.* i. p. 392, sp. 16. *Lath. Ind.* p. 183, sp. 32, male.—Icterus Icterocephalus, *Daudin, Orn.* ii. p. 337, sp. 9, male.—Pendulinus Icterocephalus, *Vieill. Nouv. Dict. d'Hist. Nat.* v. p. 317, male.—Icterus Xanthornus Icterocephalus Cayanensis, *Briss. Av.* ii. p. 124, sp. 27, pl. 12, fig. 4, male.—Cornix atra; capite, collo, pectoreque flavis, *Koelreuter, Nov. Comm. Ac. Sc. Petrop.* xi. p. 435, pl. 15, fig. 7, male.—Les Coiffes jaunes, *Buff. Ois.* iii. p. 250, male.—Carouge de Cayenne, *Buff. Pl. Enl.* 343, male.—Yellow-headed Starling, *Edw. Glean.* iii. p. 241, pl. 323, male.—Yellow-headed Oriole, *Lath. Syn.* i. part 2, p. 441, sp. 30, male. *Phil. Museum*, No. 1528, male; No. 1529, female.

AGLAIUS ICTEROCEPHALUS—JARDINE.*

Icterus (sub. gen. Xanthornus) xanthocephalus, *Bonap. Synop.* p. 52.—Aglaius xanthocephalus, *North. Zool.* ii. p. 281.

ALTHOUGH this species has long been known to naturalists as an inhabitant of South America, and its name introduced into all their works, yet they have given us no other information concerning it, than that it is black, with a yellow head and neck. It was added to the Fauna of the United States by the expedition of Major Long to the Rocky Mountains.

The female has been hitherto entirely unknown, and all the figures yet given of the male being extremely imperfect, from the circumstance of their having been drawn from wretchedly stuffed specimens, we may safely state, that this sex also is, for the first time, represented with a due degree of accuracy in our plate. The figures published by Edwards and Buffon

* I have retained what appears to be the old specific name for this bird, and which also seems to be the view of our author. Another has been selected in the *Northern Zoology*, where this bird is described from species obtained during the last expedition. It is mentioned as reaching the Saskachewan about the 20th of May, and, being even more numerous than the redwings, commits great havoc among the corn-fields.—ED.

approach the nearest to the real magnitude; but they are mere masses of black, surmounted by a yellow cap: those of Brisson and others are considerably smaller.

As that striking character, the white spot on the wing, is neither indicated in the figure, nor description of any author, we might have been induced to believe that our species is different from the South American, if a close comparison of the two had not proved their identity. Another circumstance might have been equally deceptive: Brisson, who gave the first account of this bird, from a Cayenne specimen sent to Réaumur's Museum, and who seems to have been copied by all subsequent authors, states its length to be less than seven inches, a size considerably inferior to that of the living bird. Had this admeasurement been taken from a recent specimen, we could hardly hesitate to believe our bird distinct; but as he had only a dried skin, and as Buffon's figure represents a nearer approach to the size of nature, we conclude that Brisson's estimate is not to be implicitly relied upon. Viellot, who never saw the bird, states the length to be six inches and a half, and refers it to his genus *Pendulinus*, but it certainly belongs to his genus *Agelaius*.

The male yellow-headed troopial is ten inches and a half long. The bill is dark horn colour, and formed exactly like that of the red-winged troopial. The feet are black; the irides, dark brown. The whole head, neck, and breast, are brilliant orange yellow, more vivid and sericeous on the head, and terminating in a point on the belly; the feathers around the base of the bill, the chin, and a wide stripe passing from the bill through the eye, are black. The remaining parts, excepting some feathers of the belly, and some of the under tail-coverts, which are yellow at base, are glossy black, very slightly tinged with brownish. Some of the exterior wing-coverts are pure white, with black tips, constituting two very remarkable white spots on the wing, the larger of which is formed by the greater coverts of the primaries, and the smaller one by the middling coverts. The first, second, and third

primaries, are longest and equal. The tail is four inches long, slightly rounded, the two middle feathers being somewhat shorter than those immediately adjoining. This character Wilson remarked in the red-winged troopial; and, as other notable traits are common to both species, we must regard them, not only as congeneric, but as very closely allied species of the same subgenus. They differ, however, in colour, and the yellow-headed troopial is larger, having the bill, feet, and claws consequently stronger, and the first primary longer than the second and third, or at least as long; whereas, in the red-winged, the third is the longest.

The female of our troopial is eight inches and a quarter long, a size remarkably inferior to that of the male, and exactly corresponding with the difference existing between the sexes of the red-winged troopial. The bill and feet are proportionally smaller than those of the male, the feet being blackish; the irides are dark brown. The general colour is uniform dark brown, a shade lighter on the margin of each feather. The frontlet is greyish ferruginous, as well as a line over the eye, confluent on the auricles, with a broad line of the same colour passing beneath the eye, including a blackish space varied with greyish. An abbreviated blackish line proceeds from each side of the lower mandible; the chin and throat are whitish; on the breast is a large rounded patch, of a pretty vivid yellow, occupying nearly all its surface, and extending a little on the neck. On the lower part of the breast, and beginning of the belly, the feathers are skirted with white. The form of the wings and tail is the same as in the male; the wings are immaculate.

The young of this species are very similar to the female; the young male gradually changing to the rich adult covering.

The yellow-headed troopials assemble in dense flocks, which, in all their varied movements and evolutions, present appearances similar to those of the red-winged, which have been so well described by Wilson. They are much on the ground, like the cow troopial (cow bunting of Wilson); on dissection,

their stomachs have been found filled with fragments of small insects, which seem to constitute their chief food, though doubtless they also feed on vegetable substances. Their notes resemble those of the red-winged troopial, but are more musical. The range of the yellow-headed troopial is very extensive, as it is found from Cayenne to the river Missouri; although it passes far north in the western region, yet it does not visit the settled parts of the United States.

The fine specimens represented in our plate were killed near the Pawnee villages, on the river Platte, where they were seen in great numbers about the middle of May. The males and females were sometimes observed in separate flocks.

We adopt the genus *Icterus*, nearly as it was established by Brisson, and accepted by Daudin and Temminck. Authors have variously estimated this genus, both in regard to its denomination and limits. One of Wilson's most important nomenclatural errors consisted in placing one of the species under the genus *Sturnus*, with which it has but little similarity, if we except some of its habits, and particularly its gregarious disposition. Linné considered these birds as *Orioli*, in which he was followed by Gmelin and Latham, notwithstanding the remarkable difference existing between them and the *Oriolus galbula* of Europe, the type of that genus. Illiger, and some other naturalists, considering that bird a *Coracias*, appropriated the name of *Oriolus* to our *Icterus*, and separated from it the largest species, which he called *Cassici*. Linné had declared all generic names previously given to arts, diseases, &c. to be inadmissible in natural history; Illiger, on that principle, altogether rejected the name *Icterus*, as being pre-occupied by a disease. This may account for the introduction of new names for genera, one of which, at least, ought to have retained its first appellation. Vieillot, however, would have caused less confusion, if he had adopted the name of *Icterus*, (which, with *Saxicola*, and all other names of that class, we do not think objectionable,) instead of *Agelaius*, *Pendulinus*, or *Yphantus*, three of his four genera corresponding to our *Icterus*. But, if

the latter name was considered as utterly inadmissible, we see no reason why he did not accept that of *Xanthornus*, applied to this genus by Pallas.

All the species of troopial are peculiar to America. We divide them into four subgenera, the present bird belonging to the second, to which we apply the name of *Xanthornus*. The species of this subgenus are peculiarly social in their dispositions, and their associations are not liable to interruption from the influence of love itself. Not only do many individuals of the same family combine and labour in concert, but they also unite with very different species. Their aspect is animated, and their movements are quick, bold, and vigorous; they fly rapidly, at a good height, and are much attached to the places of their birth. Their song is a kind of whistling; they walk with the body nearly erect, with a slightly hurried step, and are seen sitting on the ground, or perched on the branches of trees. They seek no concealment, and never enter the woods, though they are very careful to construct their nests in a safe situation. The troopials eat no fruits, but derive their subsistence from insects, worms, grains, and small seeds. They leave the temperate climates at the approach of winter, and are amongst the first birds of passage that return with the spring.

FEMALE CAPE MAY WARBLER.—SYLVIA MARITIMA.

PLATE III. FIG. 3.

My Collection.

SYLVICOLA MARITIMA.—SWAIN.

Sylvia maritima, *Bonap. Synop.* p. 79.

I WAS so fortunate as to obtain this undescribed little warbler in a small wood near Bordentown, New Jersey, on the 14th of May, at which season ornithologists would do well to be on the alert to detect the passenger warblers, whose stay in this vicinity is frequently limited to a very few days.

Judging by the analogical rules of our science, this bird is no other than the female of Wilson's Cape May warbler. Its appearance is so different from the male he described, that the specific identity is not recognised at first sight ; but, by carefully comparing the two specimens, a correspondence in the least variable characters may readily be perceived, especially in the remarkable slenderness of the bill, which distinguishes the Cape May from all other resembling species of North American warblers.

Wilson has given no information relative to the history and habits of this species, having never procured more than a male specimen ; and we have equally to regret, that, having obtained but a single female, we are unable to supply the deficiency, even in regard to its song.

The female Cape May warbler is four inches and three quarters long, and more than eight in extent. The bill is slender, delicate, and slightly curved, being black, as well as the feet. The irides are dark brown ; the upper part of the head, olive cinereous, each feather having a small blackish spot on the middle. A yellow line extends from the bill over the eye, and is prolonged in an obsolete trace around the auditory region, thence returning to the corner of the mouth. A blackish line passes through the eye, which is circumscribed by a whitish circle ; the cheeks are dull cinereous, with very small pale spots ; the upper parts of the neck and of the body are olive cinereous, tinged with more cinereous on the neck, and with yellow olive on the rump. The chin is whitish ; the throat, breast, and flanks are whitish, slightly tinged with yellowish, each feather having a blackish spot on the middle ; the belly is immaculate ; the vent and inferior tail-coverts are shaded in the middle of each feather with dusky. The smaller wing-coverts are dull olive green, blackish in the centre ; the middling wing-coverts are black, margined exteriorly, and tipped with pure white ; the greater wing-coverts are blackish, margined with olive white ; the primaries are dusky, finely edged with bright olive green on the exterior web, obsolete on that of the first primary, which is of

the same length as the fourth ; the second and third are longest, and but little longer than the fourth. The tail is slightly emarginated, the feathers being dusky, edged with bright olive green on the exterior side, and with white on the interior ; the two or three exterior feathers on each side have a pure white spot on their inner webs near the tip.

The female Cape May warbler may be very easily mistaken for an imperfect *Sylvia coronata*, of which four or five nominal species have already been made. The striking resemblance it bears to the young, and to the autumnal condition of the plumage in that species, requires a few comparative observations to prevent their being confounded together. The present bird is smaller than the *coronata*, with a more slender, and rather more elongated bill ; it is altogether destitute of the yellow spot on the head, as well as of the yellow on the rump, which is a striking character of the *coronata* in all its states, and gives rise to the English name adopted by Wilson.

The colour of the outer edging of the wing and tail feathers is a very good distinctive mark ; in the *maritima* it is olive green, whilst in the *coronata* it is white. The white spot on the inner webs of the exterior tail feathers, is also four times larger in the *coronata* than in the *maritima*.

GREAT CROW BLACKBIRD.—QUISCALUS MAJOR.

PLATE IV. FIG. 1, MALE. FIG. 2, FEMALE.

Quiscalus major, *Vieill. Nouv. Dict. d'Hist. Nat.* xxviii. p. 487.—*Gracula quis-cala*, *Ord, Journ. Acad. Nat. Sc. Philad.* i. p. 253.—*Gracula barita*, *Wilson, Am. Orn.* vi. *Index*, p. 8.—*Gracula quis-cala*, the purple jackdaw of the sea-coast, *Bartram, Travels*, p. 290.—*Corvus Mexicanus*? *Gmel. Syst.* i. p. 375, sp. 42. *Lath. Ind.* p. 164, sp. 36, male.—*Corvus zanoë*? *Gmel. Syst.* i. p. 375, sp. 44. *Lath. Ind.* p. 164, sp. 37, female.—*Pica Mexicana major*? *Briss. Av.* ii. p. 43, sp. 4, male.—*Pica Mexicana minor*? *Briss. Av.* ii. p. 44, sp. 5, female.—*L'Hocizana*? *Buff. Ois.* iii. p. 103, male.—*Le Zanoë*? *Buff. Ois.* iii. p. 106, female.—*Mexican crow*? *Lath. Syn.* i. p. 396, sp. 34, male.—*Lesser Mexican crow*? *Lath. Syn.* i. p. 397, sp. 36, female.—*Hocitzanatl, seu magnus Sturnus*? *Hernand. Hist. An. Nov. Hisp.* p. 21, male.—*Tzanahoei*? *Hernand. Hist. An. Nov. Hist.* p. 22, female.—*Hoitzanatl*? *Ray, Syn. Av.* p. 162, male.—*Tzanahoei, seu pica Mexicana Hernandezii*? *Ray, Syn. Av.* p. 162, female. *Philadel-phia Museum*, No. 1582, male; No. 1583, female.

QUISCALUS MAJOR.—VIEILLOT.

Quiscalus major, *Bonap. Synop.* p. 54.

No part of natural history has been more confused than that relating to North and South American birds of black plumage; which is by no means surprising, when we recollect that they are chiefly destitute of coloured markings, and that the greater number of admitted species are founded on the short and inexact descriptions of travellers, who have neglected to observe their forms, habits, and characters. But little aid has been derived from the wretched plates hitherto given, for they seem better suited to increase the confusion than to exemplify the descriptions to which they are annexed, and every succeeding compiler has aggravated, rather than diminished, this complication of error. It is, therefore, solely by a studious attention to nature, that we can extricate these species from the uncertainty involving them, and place them in a distinct and cognizable situation. With these views we now give a faithful representation of both sexes of the great crow blackbird, drawn

by that zealous observer of nature, and skilful artist, Mr John J. Audubon, and hope thereby to remove all doubt relative to this interesting species.

For the same purpose we give in the following plate a figure of the female common crow blackbird, which differs so little from its mate (admirably represented in the third volume of Wilson's Ornithology), that it would be otherwise unnecessary. This measure, we believe, will be acceptable to ornithologists, as it furnishes them with means of comparing the females of both the species in question, whence the most striking distinctive characters are obtained; that of one species differing considerably in size and colour from the male, while the sexes of the other are very similar in appearance.

Wilson having mentioned this species in his catalogue of land birds, evidently intended to describe and figure it; but this he deferred, probably, in expectation of obtaining better opportunities of examination, which are not so readily presented, as the bird does not inhabit this section of the United States.

It would be difficult to ascertain whether or not Linné and Latham have mentioned this bird in any part of their works, but the reader may perceive our opinion on this point by referring to our synonyms, which, however, are given with much doubt, since we do not hesitate to say, that those authors have not published any satisfactory description of this species.

We shall not endeavour to settle the question relative to the species inhabiting South America, or even México and the West Indies; but we may assert, that this is the only blackbird found in the United States, besides those of Wilson, which, as is the case with all that his pencil or pen has touched, are established incontestably. He may occasionally have been mistaken as to his genera, or incorrect in a specific name, but by the plate, description, and history, he has always determined his bird so obviously, as to defy criticism, and prevent future mistake.

Mr Ord has published an excellent paper in the *Journal of*

the *Academy of Natural Sciences*, proving the existence, in the United States, of two allied species of crow blackbird, in which he gives new descriptions, indicates stable characters, and adds an account of their respective habits ; but in attempting to correct Wilson, he has unfortunately misapplied the names. In this instance he should not have charged Wilson with error, who is certainly correct in regard to the species he published ; and even had this been doubtful, he who so well described and figured the common crow blackbird, ought to have been followed by ornithologists. Therefore, notwithstanding Mr Ord's decision, we consider the *quiscal*a of Wilson unquestionably the true *quiscal*a of authors. This is so obvious, that it is unnecessary to adduce any evidence in support of our opinion, which, indeed, is sufficiently afforded by Mr Ord's paper itself.

It is impossible to decide with certainty, what bird authors intended to designate by their *Gracula barita* ; but after a careful review of the short and unessential indications, respective synonyms, and *habitat*, given by different writers, we feel assured that they have not referred to one and the same species. Thus, the *barita* of Linné is a species not found in the United States, but common in the West Indies, called *Icterus niger* by Brisson, and afterwards *Oriolus niger* by Gmelin and Latham ; the *barita* of Latham, his boat-tailed grackle, is evidently the same with the *quiscal*a ;* Gmelin's *barita* is taken partly from that of Linné, and partly from the boat-tailed grackle of Latham, being compounded from both species ; we shall not be at the trouble of deciphering the errors of subsequent compilers.

Ornithologists are all at variance as to the classification of these species. Linné and Latham improperly referred them to *Gracula* ; Daudin, with no better reason, placed them under

* It was probably by Latham that Mr Ord was led to misapply the names of the two species ; for, perceiving that the *barita* of that author was the *quiscal*a, he inferred that the *quiscal*a was the *barita*.

Sturnus; Temminck considers them as *Icteri*, Cuvier as *Cassici*, and Vieillot has formed a new genus for their reception. I have no hesitation in agreeing with the latter author, and adopt his name of *Quiscalus*; but I add to the genus, as constituted by him, the *Gracula ferruginea*, which he regarded as a *Pendulinus*, and which other authors have arranged in several different genera, making of it a profusion of nominal species. Wilson judiciously included that species in the same genus with those above mentioned, although other authors had placed it in *Turdus*, *Oriolus*, &c.

The genus *Quiscalus* is peculiar to America, and is composed of four well ascertained species, three of which are found in the United States; these are *Quiscalus major*,* *versicolor*, and *ferrugineus*; the fourth, *Quiscalus baritus*, inhabits the West Indies, and probably South America.

The species of this genus are gregarious, and omnivorous; their food being composed of insects, corn, and small grains, thus assisting and plundering the agriculturist at the same time. When the first European settlements were formed in North America, the havoc made by these birds and the troopials in the grain fields, was so great, that a premium was given for their heads. Their destruction was easily effected, as they are not shy, and are more easily approached as their numbers decrease; but the evil which resulted from exterminating so many of these birds, was as unexpected as irremediable. The corn and pastures were so devoured by worms and insects, that the inhabitants were obliged to spare the birds, in order to avert a scourge which had been previously unknown. As population increases, and a greater quantity of grain is cultivated, the ravages of these birds become less perceptible, and the injury they cause comparatively trifling.

The great crow blackbird is more than sixteen inches long, and twenty-two in extent. The bill, from the angle of the

* We call the present species *Quiscalus major*, agreeably to Vieillot, who certainly intended this bird, although his description is a mere indication.

mouth, is one inch and three quarters, and its colour, like that of the feet, is black; the roof of the mouth is furnished with a slight osseous carina; the irides are pale yellow. The general appearance of the bird is black; the whole head and neck having bluish purple reflections; the interscapular region, breast, belly, sides, and smaller wing-coverts, are glossy steel blue; the back, rump, and middling wing-coverts, are glossed with copper green; the vent, inferior tail-coverts, and thighs, are plain black. The undescribed parts of the wings are deep black, slightly glossed with green, as well as the tail, which is cuneiform, capable of assuming a boat-shaped appearance, and measures nearly eight inches in length from its insertion, surpassing the tip of the wings by five inches.

The female is considerably shorter, measuring only twelve and a half inches in length, and seventeen inches and a half in extent. The bill, from the angle of the mouth, is one inch and a half long, and, with the feet, is black; the irides are of a still paler yellow than those of the male. The head and neck above are light brown, gradually passing into dusky towards the back, which, with the scapulars and lesser wing-coverts, has slight greenish reflections; a whitish line passes from the nostrils over the eye, to the origin of the neck. The chin, throat, and breast, are dull whitish; the anterior part of the breast is slightly tinged with brownish; the flanks are brownish; the belly brownish white; and the vent and inferior tail-coverts are blackish brown, each feather being margined with pale. The remaining parts are of a dull brownish black, slightly glossed with greenish; the secondaries, tail-coverts, and tail feathers, having a slight banded appearance, which is equally observable in the male.

The young at first resemble the female, but have the irides brown, and the males gradually acquire the brilliant plumage of the adult.

The great and common crow blackbirds are both alike distinguished by the very remarkable boat-like form of the tail, but the great difference of size, appearance of the females,

length of the tail, prominence of the osseous carina, and brilliancy of colouring, most obviously prove them to be altogether specifically distinct.

The great crow blackbird inhabits the southern part of the Union, where it is called jackdaw; Georgia and Florida appear to be its favourite residence. The disposition of this species is extremely social, and they frequently mingle with the common crow blackbird; vast flocks are seen among the sea islands and neighbouring marshes on the main land, where they feed at low water on the oyster beds and sand flats.

The chuck of our species is shriller than that of the common crow blackbird, and it has other notes which resemble the noise made by a watchman's rattle; their song is only heard in the spring, and though the concert they make is somewhat melancholy, it is not altogether disagreeable. Their nests are built in company, on reeds and bushes, in the neighbourhood of marshes and ponds; they lay about five eggs, which are whitish, spotted with dark brown, as represented in the plate.

Mr Ord mentions in his paper, that the first specimens he saw of this bird, were obtained on the 22d of January at Ossabaw Island, when but a few males were seen scattered over the cotton plantations. Advancing towards the south, they became more numerous; and in the early part of February, the males, unaccompanied by females, were common near the mouth of the river St Juan in Florida. A few days after, the females appeared, and associated by themselves on the borders of fresh water ponds; they were very gentle, and allowed themselves to be approached within a few feet, without becoming alarmed. Flocks composed of both sexes were seen about the middle of March.

About the latter end of November, they leave even the warm region of Florida, to seek winter quarters farther south, probably in the West Indies. Previous to their departure, they assemble in very large flocks, and detachments are seen every morning moving southward, flying at a great height. The males appear to migrate later than the females, as not

more than one female (easily distinguishable, even in the higher regions of the air, by its much smaller size) is observed for a hundred males, in the last flocks.

The great crow blackbird is also very numerous in the West Indies, Mexico, and Louisiana; but it does not frequent the Northern, or even the Middle States, like the common crow blackbird. Our opinion, that the *Corvus Mexicanus* of authors is the male of this species, and their *Corvus zanoë* the female, is corroborated by the male and female great crow blackbird being seen in separate flocks.

FEMALE COMMON CROW BLACKBIRD.—QUISCALUS
VERSICOLOR.—PLATE V. FIG. 1.

Wilson's American Ornithology, iii. p. 44, pl. 21, fig. 4, for the male, and history.
—*Quiscalus versicolor*, *Vieill. Nouv. Dict. d'Hist. Nat.* xxviii. p. 488. *Nobis, Obs. Nom. Wils. Orn. Journ. Acad. Nat. Sc. Philad.* iii. p. 365.—*Gracula quiscala*, *Linn. Syst.* i. p. 165, sp. 7. *Gmel. Syst.* i. p. 397, sp. 7. *Lath. Ind.* p. 191, sp. 7.—*Gracula barita*, *Gmel. Syst.* i. p. 396, sp. 4. *Lath. Ind.* p. 191, sp. 6. *Ord, Journ. Acad. Nat. Sc. Philad.* i. p. 254, (not of Linn.)
—*Oriolus ludovicianus*, *Gmel. Syst.* i. p. 387. sp. 31, (pied variety.)—*Oriolus leucocephalus*, *Lath. Ind.* p. 175, sp. 4, (pied variety.)—*Pica Jamaicensis*, *Briss. Av.* ii. p. 41, sp. 3.—*Monedula purpurea*, the purple jackdaw, *Catesby, Carolina*; i. p. 12, pl. 12.—*Gracula purpurea*, the lesser purple jackdaw, or crow blackbird, *Bartram, Trav.* p. 291.—*Pie de la Jamaïque*, *Buffon, Ois.* iii. p. 97.—*Cassique de la Louisiane*, *Buff. Ois.* iii. p. 242. *Pl. Enl.* 646, (pied variety.)—Purple grackle, *Penn. Arct. Zool.* sp. 153. *Lath. Syn.* i. part 2, p. 462, sp. 6.—Boat-tailed grackle, *Penn. Arct. Zool.* sp. 154. *Lath. Syn.* i. part 2, p. 460, sp. 5.
—White-headed oriole, *Penn. Arct. Zool.* sp. 147. *Lath. Syn.* i. part 2, p. 422, sp. 4, (pied variety.)—*Philadelphia Museum*, No. 1578, male; No. 1579, female; No. 1602, whitish variety.

QUISCALUS VERSICOLOR.—VIEILLOT.

THE female common crow blackbird is figured in the annexed plate, that naturalists may have an opportunity of comparing it with the corresponding sex of the great crow black-

bird, and thus receive a distinct idea of the difference between the two species, so well manifested in their females.

The specific name of this bird (*quiscala*) has been changed, in consequence of its having been applied to the genus: we have substituted the name given by Vieillot, which is admirably appropriate. The English name employed by Wilson being now rendered inadmissible by the generic change, we have thought proper to adopt a local appellation.

The female common crow blackbird is eleven inches in length, and sixteen and a half in extent. The bill is nearly an inch and a half long, and, as well as the feet, black; the irides are yellowish white; the whole head, neck, and upper part of the breast, are blackish, with steel blue, green, and violet reflections, which are not so vivid as in the male. The general colour of the body, wings, and tail, is deep sooty brown; the feathers of the back are margined with coppery and purplish; the rump, tail-coverts, and wing-coverts are glossed with purplish; the lower part of the breast and flanks have a coppery reflection; the inferior tail-coverts are obscurely glossed with violet. The tail is cuneiform, but slightly concave in flight, and is five inches long, extending two and a half inches beyond the tip of the wings; the feathers are glossed with very obscure greenish. In the male, the tail is also cuneiform, and greatly concave, exhibiting a singular boat-shaped appearance, as in the preceding species, and even more remarkably so, according to Mr Ord, which induced him to change the name.

We shall not attempt to make any additions to the almost complete, and very excellent history of this species, given by Wilson: but as the four species of *Quiscalus* are liable to be confounded, we shall proceed to give a few comparative observations, that the student may be enabled to distinguish them from each other.

Amongst other remarkable traits, the *Quiscalus ferrugineus* is at once known in all its various states, by its even tail, and comparatively smaller bill, which somewhat resembles that of

a thrush. In addition to the characters drawn from its dimensions, the *Quiscalus versicolor* can always be distinguished from its congeners, by the slight difference in size and colour between the sexes; while, in the other species, the males and females are remarkably dissimilar: the mouth of this species is, moreover, armed with a prominent osseous carina, a quarter of an inch long, which, in the others, is much smaller. That the *Quiscalus major*, and *Quiscalus baritus* should have been confounded together, is not a little surprising, as the former is sixteen inches long, the tail being eight inches, and extending five inches beyond the tip of the wings; whilst the latter is only ten inches, the tail much less cuneiform, four inches and a half long, and extending but two inches beyond the tip of the wings; the osseous carina is similar in these two species, and the markings of the females are much alike. From this statement, it is apparent, that the females of the largest and smallest crow blackbirds correspond in the disposition of their colours; a parity that does not exist in the intermediate species. In comparative size, however, they differ considerably: the female of the *baritus*, though smaller, as we have already stated, is, in proportion to its mate, considerably larger than that of the other, being only half an inch, whilst the female of the *major* is nearly four inches, smaller.

The individual represented in the annexed plate, is a remarkably fine one, in the most perfect state of plumage. It therefore more strongly resembles the male than is usual with its sex, which are generally much less brilliant in colouring, and more sooty brown. This bird was obtained at Great Egg Harbour on the twenty-first of May, and was selected as the best female of several pairs, assembled to breed at one of the identical fish-hawk nests, in the interstices of which Wilson mentions having seen them building. One of their nests contained three eggs, and the species had not ceased to lay.

These birds, as we have had occasion personally to observe, like most of the feathered tribes, are subject to become either wholly or partially albinos. From this circumstance, nume-

rous errors have been introduced in the pages of ornithological works.

ORANGE-CROWNED WARBLER.—SYLVIA CELATA.

PLATE V. FIG. 2.

Sylvia celata, Say, in *Long's Expedition to the Rocky Mountains*, i. p. 169.—
Philadelphia Museum, No. 7013.

VERMIVORA? CELATA.—JARDINE.

Sylvia celata, Bonap. *Synop.* p. 88.

THIS little bird, discovered, early in May, at Engineer Cantonment, on the Missouri river, was first described and named by Say; the species was not uncommon at that season, and appeared to be on its passage farther north. It is more particularly interesting, inasmuch as it enriches the Fauna of the United States with another species of the small subgenus *Dacnis*, which may be ascertained by inspecting the bill, represented in the annexed plate.

The orange-crowned warbler is full five inches long, and seven in extent. The bill is dark horn colour, slender, straight, entire, and tapering to an acute point; the base of the inferior mandible is whitish beneath; the legs are dusky; the irides dark brown. The general plumage above is dull greenish olive, the rump and tail-coverts being bright yellowish olive. The head is very slightly and inconspicuously crested; the feathers of the crest are orange at base, constituting a spot on the crown, visible only when they are elevated, being tipped with the common colour. The whole bird beneath is dull olive yellow; the inferior tail-coverts are pure yellow. The wings are destitute of spots or bands; the primaries are dark brown, olive green on the exterior margin, which is much paler on the outer ones; the interior margin is whitish; the four outer primaries are subequal; the fifth is but very little shorter. The tail is even, the feathers being dark brown,

edged with olive-green on the outer, and with white on the inner web.

The orange-crowned warbler resembles several species of indigenous and foreign warblers; and the females of others, such as that of the *Sylvia trichas*, may also be mistaken for it; but it may be distinguished from each of them respectively, by particular characters, which it is not necessary to detail, as the concealed orange spot of the crown is a peculiarity not possessed by either of the allied species. The Nashville warbler (*Sylvia rubricapilla*) of Wilson, seems to be more closely related to the orange-crowned warbler than any other. That bird, also, is evidently a *Dacnis*, and scarcely differs from our species, except in the white belly, the light ash colour of the head and neck, and the deep chestnut colour disposed in small touches on the crown, instead of an uniform orange colour.

The figure given in our plate is that of a male; and the only difference observable between the sexes is, that the rump of the male is of a brighter colour, approaching, in old birds, to a pure yellow.

During winter, the orange-crowned warbler is one of the most common birds in the neighbourhood of St Augustin, Florida, almost exclusively frequenting the orange trees. Their manners resemble those of the kindred species, though they have a remarkable habit of constantly inflecting the tail, like the pewee. The note consists of a chuck, and a faint squeak, but little louder than that of a mouse.

LARK FINCH.—FRINGILLA GRAMMACA.—PLATE V. FIG. 3.

Fringilla grammaca, Say, in *Long's Expedition*, i. p. 139.—*Phil. Museum*,
No. 6288.

PLECTROPHANES? GRAMMACA.—JARDINE.

Fringilla grammaca, Bonap. *Synop.* p. 108.

FOR this very interesting new species, Ornithology is again indebted to Long's Expedition, and particularly to Say, who gave it the name we have adopted, and informs us, in his notes, that many of these birds were shot in the month of June, at Bellefontaine, on the Missouri; and others were observed, the following spring, at Engineer Cantonment, near Council Bluffs.

It seems probable that the range of this bird is limited, in a great measure, by the Mississippi on the east. Like the larks, they frequent the prairies, and very seldom, if ever, alight on trees. They sing sweetly, and often continue their notes while on the wing.

The lark finch is six inches and a half long; its bill, a little notched at tip, is of a pale horn colour, with a slight elevation on the roof of the upper mandible. The feet are pale flax colour, tinged with orange; the irides are dark brown. On the top of the head are two dilated lines, blackish on the front, and passing into ferruginous on the crown and hind head, separated from each other by a whitish cinereous line; from the eye to the superior mandible is a black line, which, as well as the eye, is enclosed by a dilated white line, contracted behind the eye; from the angle of the mouth proceeds a black line, which is much dilated into a ferruginous spot on the auricles; below this is a broad white line, margined beneath by a narrow black one, originating at the inferior base of the lower mandible; the chin and throat are pure white. The neck above, the back, and rump, are dull cinereous brown, each feather of the inter-

scapular region having a blackish brown disk ; the neck beneath and breast, are dull whitish cinereous ; a small blackish brown spot is on the middle of the breast ; the belly and vent are white. The wings are dusky brown ; the lesser wing-coverts are margined with dull cinereous ; the exterior primary is equal to the third ; both are very little shorter than the second, which is longest ; the outer webs of the second, third, and fourth primaries, being whitish near their bases, form a distinct spot on the wing. The tail is rounded, the feathers being blackish brown ; the two intermediate ones are immaculate, somewhat paler than the others. The adjoining ones have a small white spot at tip, which, on the lateral feathers, increases in size, until, on the exterior one, it occupies half the total length of the feather ; whilst its exterior web is white to the base.

The female is very similar to the male, but the colours are duller, and the stripes on the head are not so decided ; the auriculars, moreover, are yellowish brown.

This species has the bill and feet precisely similar to those of Wilson's black-throated bunting, and those other *Fringillæ*, and supposed *Emberizæ*, of which I have constituted the sub-genus *Spiza*, in my *Observations on Wilson's Ornithology*. It cannot be mistaken for any other species, being very peculiar in its markings and manners.

CRIMSON-NECKED BULLFINCH.—PYRRHULA FRONTALIS.

PLATE VI. FIG. 1. MALE ; FIG. 2. FEMALE.

Fringilla frontalis, Say, in *Long's Expedition to the Rocky Mountains*, ii. p. 40.—
Philadelphia Museum, No. 6276, male ; No. 6277, female.

ERYTHROSPIZA FRONTALIS.—BONAPARTE.

Erythrospiza, Bonap. *Oss. sulla*, 2d ediz. del *Regn. Anim. Cuv.* p. 80.—See note,
vol. i. p. 121.

MUCH confusion exists in the works of naturalists respecting those finches and bullfinches that are tinged with red ;

and, in fact, their great resemblance to each other, and their intricate synonymy, render them very difficult to elucidate. The only species in Wilson's work with which the present may be confounded is the *Fringilla purpurea*, a bird closely related to ours, and for the first time well figured and permanently established by that author.* But several other allied species may be mistaken for the crimson-necked bullfinch; two of these, belonging to the genus *Pyrrhula*, present so much analogy with the present species, judging from their descriptions, that we doubted the correctness of giving the latter a separate place, considering it identical with *Pyrrhula erythrina* of Temminck, whose description agrees better with it than that of any other. Yet, in addition to some differences discoverable by comparing the crimson-necked bullfinch with his description, we cannot admit, that an Arctic bird of the old continent, known to visit even the more northern portion of the temperate climates only during very cold winters, and then not very regularly, should be found, in the month of July, on the sultry plains of the Arkansaw, and of course breeding there. We therefore conclude that our bird is not the *erythrina*, although we regret our inability to give differential characters, having

* He was rather precipitate in asserting the *Fringilla rosea* and *Loxia erythrina* to be identical with his bird, as they are actually two very distinct species, belonging to the genus *Pyrrhula*, and proper to the old continent, whilst the *purpurea* is a true *Fringilla*, and peculiar to America. To those who have not critically investigated the subject, it may appear somewhat inconsistent to state, that the *erythrina* is not an inhabitant of this continent, when it is a well-known fact, that many authors speak of it as an American bird. This apparent contradiction may be readily removed by considering what bird those authors alluded to when they stated the *erythrina* to be a native of North America. When Latham expressed a doubt in his *Synopsis*, whether the birds in the neighbourhood of New York, so much resembling the *erythrina*, were not specifically the same, he alluded to the *Fringilla purpurea*: Gmelin, as usual, in his miserable compilation, inserted this doubt of Latham as a certainty. As to the crimson-headed finch of Pennant, it is evidently the *purpurea*, thus excusing, in part, the strange assertion of Wilson. Latham also committed an error in his index, by placing the *Loxia erythrina* of Pallas and Gmelin, his own crimson-head finch, as a variety of *Fringilla rosea*.

never seen that species, as our endeavours to obtain a specimen have not been attended with success. The southern residence of our bird might lead us to suppose it the *Loxia* (*Pyrrhula*) *violacea*, which we have not seen, neither do we think the species well established. But if we are to rely on the short description given of it, and on Catesby's figure, we cannot perceive much resemblance between them; their identity, however, would not much surprise us, when we consider that Catesby's figure of the *Pyrrhula violacea* is as much like our bird as his figure of the purple finch is like what it is intended to represent. Having the authority of Say, we consider it as new, notwithstanding these doubts.

The crimson-necked bullfinch was procured by Long's party, near the Rocky Mountains, and Say described it in the journal of that expedition, under the name of *Fringilla frontalis*, adopting that genus in the comprehensive limits assigned by Illiger and Cuvier. The specific name given by Say is preoccupied in that genus by an African species; but, as we consider our bird a *Pyrrhula*, we think proper to retain his name.

The crimson-necked bullfinch is five inches and a half long. The bill and feet are horn colour; the lower mandible is paler; the irides are dark brown; the head, neck beneath, and superior portion of the breast, are brilliant crimson, most intense near the bill and over the eye; the space between the bill and the eye is cinereous grey, as well as the cheeks, and the small feathers immediately around the bill; the crimson feathers are brown at base, being red only at tip; the occiput, and the neck above and on each side, are brown, with a reddish cast, the feathers being margined with pale; the back is dusky brownish; the rump and superior tail-coverts are crimson, but less vivid than that of the head; the inferior portion of the breast, the belly and vent, are whitish, each feather having a broad fuscous line; the general plumage is lead colour at base. The wings are blackish brown, the primaries being broadly margined within, towards the base, with whitish, and exteriorly

edged with greyish ; the coverts and secondaries are edged with dull greyish ; the tail is blackish brown, hardly emarginated ; the lateral feathers are edged, on the inner side, with whitish.

Such is the description of our male specimen ; but as it was procured when summer was far advanced, a season in which the plumage begins to fade, it is proper to observe, that the colouring of this bird is probably much more brilliant in its full spring dress, the crimson extending much farther down on the back, &c. As the season advances, the tips of the feathers, which are the only parts of a crimson colour, being gradually worn off, the bird as gradually loses its brilliancy ; and, in the autumnal and winter plumage, exhibits the humble appearance of the female.

The female is altogether destitute of the brilliant colour, being dusky brown above, the feathers margined on each side with dull whitish ; the whole inferior surface is whitish, each feather having a brown longitudinal line in the middle, obsolete on the vent, which is almost pure white.

A change similar to that above mentioned, takes place in the purple finch, whose habits also much resemble those of the crimson-necked bullfinch ; but the form of its bill is certainly that of a finch, and will always distinguish it from the species we are describing, the bill of which is unequivocally of the bullfinch form. The different tints of red adorning these birds, will also at once strike the eye of the least expert in discriminating species ; in the present bird the tint is vivid crimson, whilst in the purple finch it is rosaceous. In addition to these characters, the latter is a somewhat larger bird, with a pure white belly, and inferior tail-coverts, and a deeply emarginated tail ; whilst the former has a nearly even tail, and its belly and inferior tail-coverts are striped with dusky.

Some persons, without doubt, may think it highly improper to separate generically two birds, so closely allied as the present species and the purple finch, which may be mistaken for the same species ; but we may remark, that they stand at the

extreme limit of their respective genera, and form the links of union between *Pyrrhula* and *Fringilla*. It is true, that the intimate alliance of these two groups would seem to justify Illiger, Meyer, and others, in uniting them under the same genus; but, as *Fringilla* is so vast in the number of its species, and *Pyrrhula* has a few distinctive characters, we choose to follow Temminck, Vieillot, and other naturalists, by arranging them generically separate. The closeness of affinity between these two birds, when thus properly disposed, affords no good reason for the unity of their genera; for, if we proceed to the abolition of all artificial distinction between genera united by almost imperceptible gradations, *Sylvia* would be joined to *Turdus*, *Myiothera* to *Troglodytes*, *Lanius* to *Muscicapa*, the whole of these would be confused together; and, in fact, orders and classes would be considered as genera; and even the vast groups, thus formed, would be still observed to unite inseparably at their extremes, and we should finally be compelled to consider all living bodies, both animal and vegetable, as belonging to one genus. This argument, however, may not convince every naturalist of the propriety of our arrangement, and they must, therefore, place the two species strictly according to nature, in one genus, and consider the present as a *Fringilla*; but how unnatural will then be the situation of *Pyrrhula vulgaris*, and *Pyrrhula enucleator*!

The inflated form of the bill, the curvature of both mandibles, very apparent in the superior one, as well as the compression of both at tip, are obvious characters which distinguish the species of *Pyrrhula* from the *Fringillæ*, in which both mandibles are nearly straight, and present a conic form on every side.

Berries, and seeds which they extract from the pericarp, buds, and young shoots of different plants, constitute the food of the bullfinches. They generally frequent forests and bushy places, building their nests on small trees, or low branches of large ones: The females lay four or five eggs. The greater number of the species moult twice a-year; the sexes differ

considerably in appearance. They reside in cold and temperate climates, with the exception of a few species that inhabit Africa and South America.

The crimson-necked bullfinch is found in the district of country extending along the base of the Rocky Mountains, near the Arkansaw River, and has not been observed elsewhere. In the month of July, when our specimens were obtained, these birds occur in small scattered flocks, keeping mostly on the tops of the cotton-wood trees, on whose buds they partially feed. Their voice considerably resembles that of their relative, the *Fringilla purpurea*.

ARKANSAW SISKIN.—FRINGILLA PSALTARIA.

PLATE VI. FIG. 3.

Fringilla psaltaria, Say, in *Long's Exped.* ii. p. 40.—*Phil. Museum*, No. 6278.

See note, vol. i. pp. 12 and 15.

CARDUELIS PSALTARIA.—BONAPARTE.

Fringilla (subgen. *Carduelis*) *psaltaria*, Bonap. *Synop.* p. 111.

“A VERY pretty little bird,” writes Say, in his precious zoological notes to the Journal of Long’s Expedition, “was frequently seen hopping about in the low trees or bushes, singing sweetly, somewhat in the manner of the American goldfinch or hempbird, *Fringilla tristis*. The tints, and the distribution of the colours of its plumage, resemble, in a considerable degree, those of the autumnal and less brilliant vesture of that well-known species. It may, however, be distinguished, in addition to other differences, by the black tip of its tail feathers, and the white wing spot.”

The Arkansaw siskin inhabits the country near the base of the Rocky Mountains, south of the River Platte, and probably is also to be found in Mexico. The only specimen brought by the party was shot on the 16th of July, near Boiling Spring Creek: on the annexed plate, it is figured in company with the American goldfinch in autumnal plumage, for the sake of comparison.

The Arkansaw siskin is four inches and a quarter long ; the bill is yellowish, tipped with blackish ; the feet are flesh colour ; the irides, burnt umber. The top of the head is blue black ; the cheeks are dusky olivaceous ; the neck above, and half its side, the back and rump, are olivaceous, more or less intermixed with dusky and yellowish, particularly on the rump ; the superior tail-coverts are black, varied with olivaceous ; all the under parts, from the very base of the bill to the under tail-coverts, inclusively, are of a pure bright yellow. The wings are brownish black, the smaller wing-coverts being very slightly tinged with blue, and edged with olivaceous ; the greater wing-coverts are tipped with white, which forms a narrow band across the wing ; the primaries, excepting the exterior one, are slightly edged with white ; the third, fourth, fifth, sixth, and seventh, are white towards the base, so as to exhibit a white spot beyond the wing-coverts ; the first four primaries are nearly equal in length, the fifth is a quarter of an inch shorter ; the secondaries are broadly margined with white exteriorly, towards their tips. The tail is slightly emarginated, the feathers being blackish, slightly edged with dull whitish ; the three exterior ones are widely pure white on the middle of their inner webs.

The specimen we have just described is a male, evidently in perfect plumage ; the female, and state of imperfect plumage, are unknown ; but, without risking any great deviation from the truth, we may state, from analogy, that the young resemble the female, which must be destitute of the black cap, and have the colours less vivid and less pure.

The Arkansaw siskin certainly resembles the American goldfinch in its winter dress ; but a still more striking similarity exists in some other birds, such as the European siskin (*Fringilla spinus*), and the Olivarez (*Fringilla Magellanica*, Vieill.) of South America ; and it is so similar to the European, that it might, with a much greater degree of propriety, be considered as a variety, than those regarded as such by authors. They can, however, be easily distinguished by the following comparative characters : All the under parts of the Arkansaw

siskin are bright yellow, whilst the corresponding parts of the European siskin are tinged with greenish, the throat being black, and the belly, vent, and flanks, whitish, spotted longitudinally with black; the margins and spots of the wing and tail feathers, are white in our bird, and yellow in the European siskin; the white spots on the tail of the Arkansaw siskin are confined to the three outer feathers, whilst, in the foreign bird, all the feathers, excepting the two middle ones, are marked with yellow; the bill of our species is also a little shorter, less compressed, and less acuminate; finally, we may notice another trifling difference, which consists in the proportional length of the primaries, the four first being nearly equal in the American bird, and the three first only in the European, the fourth being almost a quarter of an inch shorter. The other approximate species, *Fringilla Magellanica*, Vieill., considered by Gmelin and Latham as a variety of the European siskin, is readily distinguishable, by having the head entirely black.

Though the Mexican siskin (*Fringilla Mexicana*, Gmel.) may prove to be the female of our bird, or the male in an imperfect state of plumage (and, from the locality, we should possibly have referred it to that name, had the classification of it fallen to our lot), yet, as nothing positive can be drawn from so unessential an indication as that of the Mexican siskin, we have no hesitation in following the same course with Say, who considers it as entirely new, and have retained his elegant name of *Fringilla psaltaria*. It is very possible that not only the *Fringilla Mexicana*, but also the Black Mexican siskin, (*Fringilla catotol*, Gmel.) may be the same bird as our *Fringilla psaltaria*; but how can we determine, from the vague descriptions that have been given, of those species? They are equally applicable to the American goldfinch in its dull state of plumage; and Wilson expresses a doubt whether or not the black Mexican siskin is the same as his new species, *Fringilla pinus*.

All these pretty little birds belong to the subgenus *Car-*

duelis, having a more slender, acute, and elongated bill, than other *Fringille*.

FEMALE AMERICAN GOLDFINCH.—FRINGILLA TRISTIS.

PLATE VI. FIG. 4.

Wilson's American Ornithology, i. p. 20, pl. 1, fig. 2, for the male, and history.—*Fringilla tristis*, *Linn. Syst.* i. p. 320, sp. 12, male. *Gmel. Syst.* i. p. 907, sp. 12. *Lath. Ind.* p. 452, sp. 64. *Vicill. Nouv. Dict. d'Hist. Nat.* xii. p. 167.—*Fringilla spinus*, var. γ . *Gmel. Syst.* i. p. 914, sp. 25, male, in winter plumage.—*Carduelis Americana*, *Briss. Av.* iii. p. 64, sp. 3.—*Carduelis Americanus*, the American Goldfinch, *Catesby, Carolina*, i. p. 43, pl. 43, male in spring dress. *Bart. Trav.* p. 291.—*Chardonneret jaune*, *Buff. Ois.* iv. p. 212.—*Chardonneret du Canada*, *Buff. Pl. Enl.* 202, fig. 2, male, in spring dress.—*Tarin de la Nouvelle York*, *Buff. Ois.* iv. p. 231.—*Pl. Enl.* 292, fig. 1, male changing; fig. 2, male in winter dress.—*Golden Finch*, *Penn. Arct. Zool.* sp. 242.—*American Goldfinch*, *Edwards, Glean.* ii. p. 133, pl. 274, male and female. *Lath. Syn.* ii. part 1, p. 288, sp. 57. *Id.* 1st. Suppl. p. 166.—*Siskin*, var B, *Lath. Syn.* ii. part 1, p. 291, sp. 58, male changing.—*Philadelphia Museum*, No. 6344, male; No. 6345, female; No. 6346, Albino.

CARDUELIS AMERICANA.—EDWARDS.

Male and note, see vol. i. pp. 11—15.

WE have been induced, by the analogy existing between the preceding new species and this common bird, to figure them as companions on the same plate, that they may be immediately and readily compared. To give the present figure more interest, we have chosen the female, though we might, with equal propriety, have selected the male in winter plumage, as the latter differs but slightly from its mate during that season. The very great dissimilarity between the sexes in their spring dress, will justify the reappearance of a bird already given by Wilson, more especially as it has, in this state, been mistaken for a distinct species, and most unaccountably arranged in the systems as a variety of the European siskin.

The history of this bird, which so completely resembles the

goldfinch of Europe in song and habits, being nearly completed by the golden pen of Wilson, we shall not attempt to add any observations of our own, but shall refer the reader to his volume, quoted above, for its biography. As we cannot but observe that his description is short and somewhat imperfect, probably owing to the opinion he at first entertained, but afterwards judiciously relinquished, that a minute description of common birds is superfluous, we shall proceed to describe the species in all its different states.

The male American goldfinch in summer dress, represented by Wilson in his first plate, is four and a half inches long, and eight in extent. The bill resembles that of the European goldfinch, and, as well as the feet, is of a reddish cinnamon colour; the irides are dark brown; the front and vertex are glossy black; the remaining part of the head, and all the body, rich lemon yellow; the superior and inferior tail-coverts are white, as well as the thighs; the wings and tail are black, the small coverts of the wings being yellow externally, and white on the inner side and at tip; the greater coverts are tipped with white, an arrangement which exhibits two white bands across the wings; the first and third primaries are equal, hardly shorter than the second, which is the longest, the fourth being nearly as long as the third; the secondaries are margined with white. The tail is emarginated, the feathers being black, slightly edged with white, and having a large pure white spot on the inner web at tip.

The female, as is usual in this family of birds, is rather smaller than the male, and is widely different from that sex in the colours of its plumage. The bill and feet are brownish; the lower mandible is whitish at base; the head has no appearance of black, and, with the neck, the back, and rump, is brownish olive, the latter part being of a lighter shade than the preceding portions; the upper tail-coverts are greenish white; the frontlet, cheeks, sides of the neck, throat, and upper part of the breast, are pale greenish yellow; the lower portion of the breast, belly, vent, flanks, under wing and under tail-coverts,

are whitish. The wings and tail, which always afford the most constant specific characters, are like those of the male, except that the black colour is less intense, and the white is less pure, being slightly tinged with rufous.

In this state of plumage, the bird closely resembles the *Fringilla citrinella* of the south of Europe, which, however, can always be distinguished from it by several characters, but more particularly by its greenish yellow rump, and by being destitute of the whitish spot at the tip of the inner web of the tail feathers. The young are so like the females as to be distinguished with difficulty; their colours, however, are still less lively; they assume the adult livery in the spring, but do not exhibit all the brilliancy of the perfect bird until the third moult.

The American goldfinch moults twice a-year, in the seasons of spring and autumn. At the spring moult, the males obtain their vivid colouring, which is lost at the autumnal change, and replaced by a more humble dress, similar to that of the female, from which sex they cannot then be readily distinguished. The black of the wings is, however, somewhat more intense; the white of the wings and of the tail is dull and dirty, and a yellowish tint prevails around the eyes, as well as on the neck. From this statement it follows, that Wilson's figure represents the adult male in that brilliant dress in which it appears for the space of four or five months only; whilst the figure in the annexed plate exhibits the invariable colours of the female and young, as well as the appearance of the male for the remaining seven months in the year.

As the season advances, the plumage of the adult male gradually changes, but not simultaneously in the different individuals, so that in the spring and autumn we rarely find two that are alike; some being more or less yellow, having a rudiment of black on the head, &c., according as the moulting process is more or less advanced.

A remarkable variety is exhibited in a changing male, which I shot near Philadelphia, in the month of April, and which is

therefore considerably advanced towards perfect plumage. All the primaries are pure white on the outer web towards the base, thus constituting, in the most obvious manner, that white spot beyond the wing-coverts, assigned by Say as a good discriminating mark between this species and the preceding. The fact we have related diminishes the value of this character, which is nevertheless a very good one; but as many other distinctions are observable, we need not rely exclusively upon it. The deviation we have here mentioned is the more remarkable, as the greater number of species allied to this bird have that spot, either white or yellow.

Since writing the above, I obtained, from one of the large flocks in which these birds congregate in the autumn, several specimens of both sexes, more or less distinguished by the marking above stated as peculiar to the variety.

LAZULI FINCH.—FRINGILLA AMÆNA.—PLATE VI. FIG. 5.

Emberiza amæna, Say, in *Long's Expedition to the Rocky Mountains*, ii. p. 47.—*Philadelphia Museum*, No. 5919.

SPIZA AMÆNA.—BONAPARTE.*

Fringilla, (subgen. *Spiza*,) *Bonap. Synop.* p. 106.

THE genus *Emberiza*, though very natural, and distinguished by well marked characters, has, notwithstanding these advantages, been often misunderstood; and authors, without

* In the Prince of Musignano's Synopsis of the birds of the United States, in the *Annals of the Lyceum of Natural History*, New York, he has instituted a subgenus, under the name of *Spiza*, to contain a portion of the *Fringillidæ*, dividing it into two sections. The first contains our present bird, with the *F. cyanea* and *ciris* of Wilson, and to which, we think, the subgenus should be restricted. Those which form the second section run much more into the *Emberizæ*, and although it may "form the passage to the buntings," it is of sufficient importance to constitute a small *sub-group*.—ED.

consulting the boundaries assigned to it by themselves, have recorded a copious list of species, whilst in nature its limits are much restricted. We are not therefore surprised, that so acute a zoologist as Say should have arranged his bird in that genus, particularly as it is more closely allied to *Emberiza* than many of those, not only of Wilson, but even of Linné and Latham.

This bird, which we have no hesitation in pronouncing one of the most beautiful of its tribe, would be placed by Vieillot in his genus *Passerina*; but, according to my classification, it belongs to the genus *Fringilla*, and to that American subgenus lately established in my "*Observations on the Nomenclature of Wilson's Ornithology*," under the name of *Spiza*. As a species, it is more intimately allied to *Fringilla ciris* and *Fringilla cyanea*,* which I stated in that paper to differ so much from their congeners, particularly in the greater curvature of the upper mandible, as to deserve, perhaps, a separation into a small subgenus by themselves. This would unite *Fringilla* to *Tanagra*, as *Spiza*, on the other hand, shows its transition to *Emberiza*.

The lazuli finch is five inches and three quarters long; the bill is formed like that of the Indigo bird (*Fringilla cyanea*, Wilson), but is emarginated near the tip, being horn colour, as well as the feet; the irides are dark brown; the whole head and neck are brilliant verdigrise blue; the back is brownish black, intermixed with blue, and a little ferruginous brown; the rump is pure verdigrise blue; the superior portion of the breast is pale ferruginous; the lower part of the breast, the belly, and inferior tail-coverts, are white; the smaller wing-coverts are blue; the middling coverts are blackish at base, and broadly tipped with white, forming a wide band across the wing; the greater wing-coverts are blackish, obscurely margined with blue, and slightly tipped with white on the exterior web, constituting a second band across the wings parallel

* Its relation to *Fringilla cyanea*, considered as *Emberiza*, probably induced Say to place it under that genus.

to the first, but much narrower; the primaries and secondaries are blackish, obscurely margined with blue on the outer web; the under wing-coverts are whitish, a little intermixed with blue; the tail is slightly emarginated, the feathers being blackish, edged with blue on the outer web, and with white on the inner web at tip.

The above description of this handsome bird is taken from a male in summer plumage, the only specimen brought by Long's exploring party; hence we are unable to give any positive information relative to the female and young, though, from analogy, we must believe them in great part destitute of the blue colour, and otherwise less brilliantly adorned.

This species appears to be rather rare; it is found along the Arkansaw River, near the base of the Rocky Mountains, during the summer months; they frequent the bushy valleys, keeping much in the grass, and seldom alight on shrubs or trees. In this respect, also, they resemble the Indigo bird, and probably their habits are the same, although the note is entirely dissimilar.

FULVOUS, OR CLIFF SWALLOW.—HIRUNDO FULVA.—

PLATE VII. FIG. 1.

Hirundo fulva, Vieill. *Ois. de l'Am. Sept.* i. p. 62, pl. 32. *Stephens, Cont. of Shaw's Zool.* x. part i. p. 126. *Dewitt Clinton, Ann. Lyceum Nat. Hist. N. Y.* i. p. 156.—*Hirundo lunifrons*, Say, in *Long's Exp. to the Rocky Mountains*, ii. p. 47.—*Phil. Mus.* No. 7624.

HIRUNDO FULVA.—VIEILLOT?

Hirundo fulva, Bonap. *Synop.* p. 64.—The Republican, or cliff swallow, *Aud.* pl. 68, m. and y. *Orn. Biog.* i. p. 353.—*Hirundo lunifrons*, *North. Zool.* ii. p. 331.

WITH the exception of a very imperfect description, little was known relative to this interesting bird, anterior to Long's expedition to the Rocky Mountains. One of the notes annexed to the account of that journey, contains an excellent description of this swallow, with a notice of its habits, and remarkable

manner of building. Mr de Witt Clinton has recently published a paper on the same subject, accompanied by some observations from Mr Audubon. Combining what these gentlemen have made known, with the information previously given by Vieillot and Say, we can present a tolerably complete history of the cliff swallow.

Some doubts having been entertained whether the *Hirundo lunifrons* of the Rocky Mountains be the same species as the *Hirundo fulva* of the western part of New York, I was desirous of deciding the question by comparing the specimens; this I accomplished through the politeness of Dr Dekay of New York, who, with the kindness and liberality distinctive of those who cultivate science for its own sake, sent me the specimen and nest deposited by Mr Clinton in the Cabinet of the Lyceum. Thus, being possessed of the individuals in question, we are enabled to place their specific identity beyond the reach of future uncertainty.*

* There can be nothing more annoying than being in a manner obliged to give an opinion regarding a disputed point, from descriptions and plates, without the actual comparison of the birds themselves. The authors of the *Northern Zoology* consider the *H. lunifrons* of Say different from the *H. fulva* of Vieillot, on account of the pure white front and slightly forked tail of the former; but the Prince of Musignano makes them identical, from actual comparison with authentic specimens of *H. fulva*. The alternative, therefore, must be, that the specimens brought by the Northern Expedition are distinct from either, and yet unnamed. Audubon's figure, however, is very nearly pure white in the frontlet, and he insists upon that colour even in the young;—the tail is square, a decided mark of our author. There are either two species confused in these, or inattention has been paid to the drawing and colouring of those parts where distinction chiefly is insisted on.

On the precipitous coast of the Frith of Forth, near Tantallon Castle, in Haddingtonshire, there was, in 1826, and for several years previous, a colony of fifty or sixty pairs of *H. urbica*, building their nests in the usual form, but in the same manner, under a huge projecting cliff, as represented of the *H. fulva*. They struck me at the time of first seeing them, as a remarkable situation for the species; and the plate here immediately recalled them to my memory. Mr Audubon's description of their manner of building, may add to that of our author:—

“About daybreak they flew down to the shore of the river, one hundred yards distant, for the muddy sand of which the nests were constructed, and worked with great assiduity until near the middle of the day, as if it were that the

That Say considered his *Hirundo lunifrons* as a new bird, is entirely attributable to the incorrectness of Vieillot's figure, which is one of those better suited to mislead than to assist the naturalist in his researches. The most striking characteristic of the *Hirundo fulva*, is its even tail; yet Vieillot has represented this part as forked. We are therefore not surprised that our learned zoologist, who had no opportunity of consulting the coloured plate, should not have even thought of comparing his bird with that of Vieillot, who probably figured it with a forked tail, merely because it was a swallow. The characters of the cliff swallow are so remarkable, and its manner of building is so peculiar, that, when these are accurately delineated, it cannot be mistaken for any other species.

The cliff swallow is five and a half inches long. The bill is black, and the feet dusky; the irides are dark brown. A narrow black line extends over the bill to each eye; the front is pale rufous, and the remaining part of the crown, black vio-

heat of the sun was necessary to dry and harden their moist tenements. They then ceased from labour for a few hours amongst themselves, by performing aerial evolutions, courted and caressed their mates with much affection, and snapped at flies and other insects on the wing. They often examined their nests to see if they were sufficiently dry; and as soon as these appeared to have acquired the requisite firmness, they renewed their labours. Until the females began to sit, they all roosted in the hollow limbs of the sycamores (*Platanus occidentalis*) growing on the banks of the Licking River, but when incubation commenced, the males alone resorted to the trees. A second party arrived, and were so hard pressed for time, that they betook themselves to the holes in the wall where bricks had been left out for the scaffolding. These they fitted with projecting necks, similar to those of the complete nests of the others. Their eggs were deposited on a few bits of straw, and great caution was necessary in attempting to procure them, as the slightest touch crumbled their frail tenement into dust. By means of a table spoon, I was enabled to procure many of them. Each nest contained four eggs, which were white, with dusky spots. Only one brood is raised in a season. The energy with which they defended their nests was truly astonishing. Although I had taken the precaution to visit them at sunset, when I supposed they would all have been on the sycamores, yet a single female happened to be sitting, and gave the alarm, which immediately called out the whole tribe. They snapped at my hat, body, and legs, passed between me and the nests within an inch of my face, twittering their rage and sorrow."—ED.

laceous; the chin, throat, and cheeks, are dark ferruginous, extending in a narrow band on the hind head; the upper part of the body is black, glossed with violaceous; the inferior part of the rump, and some of the tail-coverts, are pale ferruginous; the breast is of a pale rufous ash colour, and the remaining under parts are whitish, tinged with brownish ferruginous; the wings and tail are blackish, the small wing-coverts being glossed with violaceous; the inferior wing-coverts are ashy brown; the tail is nearly entire, somewhat shorter than the tips of the wings; the exterior tail-feather is slightly edged with whitish on the inner vane; the wing and tail-feathers have their shafts black above, and white beneath.

This description is taken from our finest male, which is also represented in the plate; no difference exists between the sexes, and the young, even during early age, can scarcely be distinguished from the parents, except by having the front white, instead of rufous. We are informed by Vieillot, that some individuals have all the inferior surface of the body tinged with the same colour as that of the throat: these are probably very old males.

A very singular trait distinguishes the migrations of this bird. While the European, or white variety of the human race, is rapidly spreading over this continent, from its eastern borders to the remotest plains beyond the Mississippi, the cliff swallow advances from the extreme western regions, annually invading a new territory farther to the eastward, and induces us to conclude, that a few more summers will find it sporting in this immediate vicinity, and familiarly established along the Atlantic shores.

Like all other North American swallows, this species passes the winter in tropical America, whence in the spring it migrates northward, for the purpose of breeding. It appears to be merely a spring passenger in the West Indies, remaining there but a few days, according to Vieillot, who, not seeing any in the United States, and observing some while at sea, in August, in the latitude of Nova Scotia, supposed that they propagated in a still more northern region. As we have not re-

ceived any account of their inhabiting the well explored countries around Hudson's Bay, we are led to the conclusion, that the western wilds of the United States have hitherto been their summer resort, and that not until recently have they ventured within the domains of civilized man. Be this as it may, they were observed in great numbers, by Major Long's party, near the Rocky Mountains, in the month of July; and a few were also seen on the banks of the Missouri river. Within ten or twelve years, they have become familiar in different localities of Ohio, Kentucky, &c., whence they are extending very rapidly, and have recently appeared in the western part of New York. In order to show the rapid progress of this little stranger, we quote the following passage from Mr Clinton's interesting paper:—

The fulvous swallow “first made its appearance at Winchell's tavern, on the high-road, about five miles south of Whitehall, near Lake Champlain, and erected its nest under the eaves of an outhouse, where it was covered by the projection of a roof. This was in 1817, and in this year there was but one nest; the second year, seven; the third, twenty-eight; the fourth, forty; and in 1822 there were seventy, and the number has since continued to increase.

“It appeared in 1822 at Whitehall, on the 5th of June, and departed on the 25th of July; and these are the usual times of its arrival and disappearance.”

This active little bird is, like its congeners, almost continually on the wing, and feeds on flies and other insects, while performing its aerial evolutions. Its note is different from that of other swallows, and may be well imitated by rubbing a moistened cork around in the neck of a bottle. The species arrive in the west from the south early in April, and immediately begin to construct their symmetrical nests, which are perfected by their united and industrious efforts. At the dawn of day they commence their labours, by collecting the necessary mud from the borders of the river or ponds adjacent, and they persevere in their work until near mid-day, when they relinquish

it for some hours, and amuse themselves by sporting in the air, pursuing insects, &c. As soon as the nest acquires the requisite firmness, it is completed, and the female begins to deposit her eggs, which are four in number, white, spotted with dusky brown. The nests are extremely friable, and will readily crumble to pieces: they are assembled in communities, as represented in the background of our plate. In unsettled countries, these birds select a sheltered situation, under a projecting ledge of rock; and, in civilized districts, they have already evinced a predilection for the abodes of man, by building against the walls of houses, immediately under the eaves of the roof, though they have not in the least changed their style of architecture. A nest from the latter situation is now before me; it is hemispherical, five inches wide at its truncated place of attachment to the wall, from which it projects six inches, and consists exclusively of a mixture of sand and clay, lined on the inside with straw and dried grass, negligently disposed for the reception of the eggs. The whole external surface is roughened by the projection of the various little pellets of earth which compose its substance. The entrance is near the top, rounded, projecting, and turning downward, so that the nest may be compared to a chemist's retort, flattened on the side applied to the wall, and with the principal part of the neck broken off.

So great is the industry of these interesting little architects, that this massive and commodious structure is sometimes completed in the course of three days. About the middle of July, some nests found near the Rocky Mountains contained young ones, while in others the process of incubation had not terminated. It is probable that the cliff swallows rear two broods in that region, though in Kentucky and Ohio, agreeably to Mr Audubon, they have but one in the year. During the first few days of August, they assemble in flocks, and, after several attempts to commence their migration, they finally succeed in obtaining a unanimity of purpose, and they disappear as suddenly as they came.

BURROWING OWL.—STRIX CUNICULARIA.

PLATE VII. FIG. 2.

Strix cunicularia, *Molina, Hist. Chili*, (Am. ed.) i. p. 184. *Gmel. Syst.* i. p. 292, sp. 28. *Lath. Ind.* p. 63, sp. 38. *Vieill. Ois. de l'Am. Sept.* i. p. 48. *Say*, in *Long's Expedition to the Rocky Mountains*, ii. p. 36 and 200.—*Ulula cunicularia*, *Feuillée, Journ. Obs. Phys.* p. 562.—*Noctua Coquimbana*, *Briss. Av.* i. p. 525, sp. 11.—*Coquimbo Owl*, *Lath. Syn.* i. p. 145, sp. 33. *Philadelphia Museum*, No. 472.

ULULA CUNICULARIA.—FEUILLÉE.*

Strix (subgen. *Surnia*) *cunicularia*, *Bonap. Synop.* p. 36

VENERABLE ruins, crumbling under the influence of time and vicissitudes of season, are habitually associated with our recollections of the owl; or he is considered as the tenant of sombre forests, whose nocturnal gloom is rendered deeper and more awful by the harsh dissonance of his voice. In poetry he has long been regarded as the appropriate concomitant of darkness and horror; and, when heard screaming from the topmost fragments of some mouldering wall, whose ruggedness is but slightly softened by the mellowing moonlight, imagination loves to view him as a malignant spirit, hooting triumphantly over the surrounding desolation! But we are now to make the reader acquainted with an owl to which none of these associations can belong; a bird that, so far from seeking refuge in the ruined habitations of man, fixes its residence within the earth; and, instead of concealing itself in solitary recesses of the forest, delights to dwell on open plains, in company with

* I am far from being satisfied with the generic appellation I have now provisionally bestowed on this bird. It is completely a *day owl* in its habits, but in many parts of its structure resembles the nocturnal species. Wherever it may be hereafter placed by a strict analysis, it will prove a most interesting form, and perhaps show some connexions that we do not at present anticipate. The Prince of Musignano has properly incorporated Mr Say's remarks with his description.
—ED.

animals remarkable for their social disposition, neatness, and order. Instead of sailing heavily forth in the obscurity of the evening or morning twilight, and then retreating to mope away the intervening hours, our owl enjoys the broadest glare of the noonday sun, and, flying rapidly along, searches for food or pleasure during the cheerful light of day.

The votaries of natural science must always feel indebted to the learned and indefatigable Say, for the rich collection of facts he has made whenever opportunities have been presented, but more especially in the instance of this very singular bird, whose places of resort in this country are too far distant to allow many the pleasure of examining for themselves. We feel doubly disposed to rejoice that the materials for the history of our bird are drawn from his ample store, both on account of their intrinsic excellence, and because it affords us an opportunity of evincing our admiration of the zeal, talents, and integrity, which have raised this man to the most honourable and enviable eminence as a naturalist.

In the trans-Mississippian territories of the United States, the burrowing owl resides exclusively in the villages of the Marmot, or Prairie Dog, whose excavations are so commodious, as to render it unnecessary that our bird should dig for himself, as he is said to do in other parts of the world, where no burrowing animals exist. These villages are very numerous, and variable in their extent, sometimes covering only a few acres, and at others spreading over the surface of the country for miles together. They are composed of slightly elevated mounds, having the form of a truncated cone, about two feet in width at base, and seldom rising as high as eighteen inches above the surface of the soil. The entrance is placed either at the top or on the side, and the whole mound is beaten down externally, especially at the summit, resembling a much-used footpath.

From the entrance, the passage into the mound descends vertically for one or two feet, and is thence continued obliquely downwards, until it terminates in an apartment, within which

the industrious marmot constructs, on the approach of the cold season, the comfortable cell for his winter's sleep. This cell, which is composed of fine dry grass, is globular in form, with an opening at top capable of admitting the finger; and the whole is so firmly compacted, that it might, without injury, be rolled over the floor.

It is delightful, during fine weather, to see these lively little creatures sporting about the entrance of their burrows, which are always kept in the neatest repair, and are often inhabited by several individuals. When alarmed, they immediately take refuge in their subterranean chambers, or, if the dreaded danger be not immediately impending, they stand near the brink of the entrance, bravely barking and flourishing their tails, or else sit erect to reconnoitre the movements of the enemy.

The mounds thrown up by the marmot in the neighbourhood of the Rocky Mountains, have an appearance of greater antiquity than those observed on the far distant plains. They sometimes extend to several yards in diameter, although their elevation is trifling, and, except immediately surrounding the entrance, are clothed with a scanty herbage which always distinguishes the area of these villages. Sometimes several villages have been observed almost entirely destitute of vegetation, and, recollecting that the marmot feeds exclusively on grasses and herbaceous plants, it seems singular that this animal should always choose the most barren spot for the place of his abode. However this may be accounted for, it at least affords an opportunity of beholding the approach of his enemies, and allows him to seek, within the bosom of the earth, that security which he has neither strength nor arms to command.

In all these prairie dog villages, the burrowing owl is seen moving briskly about, or else in small flocks scattered among the mounds, and, at a distance, it may be mistaken for the marmot itself, when sitting erect. They manifest but little timidity, and allow themselves to be approached sufficiently close for shooting; but, if alarmed, some or all of them soar away,

and settle down again at a short distance ; if further disturbed, their flight is continued until they are no longer in view, or they descend into their dwellings, whence they are difficult to dislodge.

The burrows into which these owls have been seen to descend, on the plains of the river Platte, where they are most numerous, were evidently excavated by the marmot ; whence it has been inferred by Say, that they were either common, though unfriendly residents of the same habitation, or that our owl was the sole occupant of a burrow acquired by the right of conquest. The evidence of this was clearly presented by the ruinous condition of the burrows tenanted by the owl, which were frequently caved in, and their sides channelled by the rains, while the neat and well preserved mansion of the marmot showed the active care of a skilful and industrious owner. We have no evidence that the owl and marmot habitually resort to one burrow, yet we are well assured by Pike and others, that a common danger often drives them into the same excavation, where lizards and rattlesnakes also enter for concealment and safety.

The owl observed by Vieillot in St Domingo digs itself a burrow two feet in depth, at the bottom of which its eggs are deposited on a bed of moss, herb stalks, and dried roots. These eggs are two in number, of a very pure white, nearly spheroidal, and about as large as those of the dove. When the young are only covered with down, they frequently ascend to the entrance to enjoy the warmth of the sun, but as soon as they are approached, they quickly retire into the burrow.

The note of our bird is strikingly similar to the cry of the marmot, which sounds like *cheh, cheh*, pronounced several times in rapid succession ; and were it not that the burrowing owls of the West Indies, where no marmots exist, utter the same sound, it might be inferred, that the marmot was the unintentional tutor to the young owl : this cry is only uttered as the bird begins its flight. Vieillot states that the burrowing owl inhabiting St Domingo, sometimes alights on farm-houses

at night, and produces a note which resembles that of the syllables *hoo*, *hoo*, *oo*, *oo*; but has he not mistaken a nocturnal species for it in this case?

The food of the bird we are describing, appears to consist entirely of insects, as, on examination of its stomach, nothing but parts of their hard wing-cases were found. The authors we have quoted, inform us, that, in Chili and St Domingo, the burrowing owls also feed on rats, mice, and reptiles, which we cannot suppose to be the case with the bird found in the United States, as our explorers never could discover the slightest reason for believing that they preyed on the marmots, whose dwellings they invade.

Throughout the region traversed by the American expedition, the marmot was unquestionably the artificer of the burrow inhabited by the owl, while the testimony of Vieillot is equally conclusive, that the owl digs for himself when he finds no burrow to suit his purpose; but, preferring one already made, his fondness for the prairie dog villages is readily explained.

Whether only a single species of burrowing owl inhabits the vast continent of North and South America, or whether that of Chili mentioned by Molina, that of St Domingo described by Vieillot, and the owl of the Western American territory, be distinct though closely allied species, can only be determined by accurate comparisons.* When we consider the extraordinary habits attributed to all those, as well as their correspondence in form and colours noted in the several descriptions, we are strongly inclined to believe that they are all of the same species; nevertheless, Vieillot states his bird to be somewhat different from that of Molina, and the eggs of the burrowing owl of the latter are spotted with yellow, whilst those of the former are immaculate. We have to regret that

* Should they prove to be different species, new appellations must be given; and as that of *Strix cucularia* will, by right of priority, be exclusively retained for the Coquimbo owl, we would propose for the present bird the name of *Strix hypugæa*.

no figure has hitherto been published, and we cannot well understand why Vieillot did not thus exemplify so interesting a bird. Our figure will be the more acceptable to ornithologists, as it is the first which has been given of the burrowing owl: in the distance we have introduced a view of the prairie dog village.

The peculiar subgenus of this bird has not hitherto been determined, owing to the neglect with which naturalists have treated the arrangement of extra-European owls. Like all diurnal owls, our bird belongs to the subgenus *Noctua* of Savigny, having small oval openings to the ears, which are destitute of operculum, the facial disk of slender feathers small and incomplete, and the outer edges of the primaries not recurved; but it differs from them in not having the tarsus and toes covered by long thick feathers.

The burrowing owl is nine inches and a half long, and two feet in extent. The bill is horn colour, paler on the margin, and yellow on the ridges of both mandibles; the inferior mandible is strongly notched on each side: the capistrum before the eyes terminates in black rigid bristles, as long as the bill: the irides are bright yellow. The general colour of the plumage is a light burnt-umber, spotted with whitish, paler on the head, and upper part of the neck; the lower part of the breast and belly are whitish, the feathers of the former being banded with brown: the inferior tail-coverts are white immaculate. The wings are darker than the body, the feathers being much spotted and banded with whitish; the primaries are five or six banded, each band being more or less widely interrupted near the shaft, and margined with blackish, which colour predominates towards the tip; the extreme tip is dull whitish; the shafts are brown above, and white beneath: the exterior primary is finely serrated, and equal in length to the fifth, the second and fourth being hardly shorter than the third, which is the longest. The tail is very short, slightly rounded, having its feathers of the same colour as the primaries, and like them five or six banded, but more purely white at tip. The feet are

dusky, and remarkably granulated, extending, when stretched backwards, an inch and a half beyond the tail; the tarsi are slender, much elongated, covered before and on each side with loose webbed feathers, which are more thickly set near the base, and become less crowded towards the toes, where they assume the form of short bristles; those on the toes being altogether setaceous, and rather scattered. The lobes beneath the toes are large, and much granulated; the nails are black, and rather small, the posterior one having no groove beneath.

The individual we have described is a male, and no difference is observable in several other specimens: the female differs in nothing except that her eyes are of a pale yellow colour.

YOUNG YELLOW-BELLIED WOODPECKER.—PICUS VARIUS.

PLATE VIII. FIG. 1, 2.

See *Wilson's American Ornithology*, i. p. 147, pl. 9, fig. 2, for the adult and history.—*Picus varius*, *Linn. Syst.* i. 176, sp. 20. *Gmel. Syst.* i. p. 438, sp. 20. *Lath. Ind.* p. 232, sp. 21. *Vieill. Ois. de l'Am. Sept.* ii. p. 63, pl. 118, adult male; pl. 119, very young.—*Picus varius Carolinensis*, *Briss. Av.* iv. p. 62, sp. 24.—*Picus varius minor*, ventre luteo, the yellow-bellied woodpecker, *Catesby, Carolina*, i. p. 21, pl. 21, left figure, adult male. *Bartram, Trav.* p. 291.—Epeiche ou Pic varié de la Caroline, *Buff. Ois.* vii. p. 77. *Pl. Enl.* 785, adult male.—Yellow-bellied woodpecker, *Penn. Arct. Zool.* sp. 166. *Latham, Syn.* i. p. 574, sp. 20.—*Philadelphia Museum*, No. 2004, adult male; No. 2005, adult female.—*My Collection*, young and variety.

PICUS VARIUS.—BONAPARTE.

Picus varius, *Bonap. Synop.* p. 45.

As Wilson's history of this well-known woodpecker is complete, and his description obviously discriminates the sexes and young, we shall refer the reader entirely to him for information on those points. The present bird is introduced on account of its anomalous plumage; for, although the colour of the head is but slightly advanced towards its red tint, ha-

ving only two or three reddish points visible on the forehead, yet the patch on the breast is quite as obvious as it is found in the adult state. In young birds of the first and second years, this patch is usually obsolete, the breast being chiefly dusky-grey, although the crown is entirely red.

The specimen before us, possibly exhibiting one of the periodical states of plumage of this changeable bird, is the only one we have been able to procure, amongst a great number of the young of both sexes in the ordinary dress. The well-marked patch on the breast might induce the belief that this individual is an adult female, and that this sex, as several writers have erroneously remarked, is destitute of the red crown; but, in addition to the fact that our specimen proved, on dissection, to be a male, we obtained, almost every day during the month of November, young birds of both sexes, with the crown entirely red, or more or less sprinkled with that colour, the intermixture arising altogether from age or advanced plumage, and not from sex. We are unable to state, with any degree of certainty, at what period the bird assumes the plumage now represented; and we rather incline to the opinion that it is an accidental variety.

For the purpose of comparison, we have added, on the same plate, the most interesting portion of a young bird, as it usually appears in November of the first year; and though the sexes are then alike in plumage, we had the figure taken from a young male, in order to complete the iconography of that sex.

Vieillot's figure represents the young before the first moult, when, like our anomalous specimen, they have no red on the crown; differing, however, in not having the head of a glossy black, but of a dull yellowish-grey, and the patch on the breast also of a dull grey tint.

BAND-TAILED PIGEON.—COLUMBA FASCIATA.

PLATE VIII. FIG. 3.

Columba fasciata, Say, in *Long's Expedition to the Rocky Mountains*, ii. p. 10.—
Philadelphia Museum, No. 4938.

COLUMBA FASCIATA.—SAY.*

Columba fasciata, Bonap. *Synop.* p. 119.—Wagl. *Syst. Av. Columba*, No. 47?

THIS bird, which is a male, was shot in July, by Mr Titian Peale, at a saline spring on a small tributary of the river Platte, within the first range of the Rocky Mountains; it was accompanied by another individual, probably its mate, which escaped. As no other specimens have been discovered, the reader will not be surprised that our specific description is unaccompanied by a general history of their manners.

The band-tailed pigeon is thirteen inches long; the bill is yellow, black at tip, and somewhat gibbous behind the nostrils; the feet are yellow, and the nails black; the irides are

* We have already passed two distinct forms among the *Columbidae* in the passenger and Carolina pigeons of long and slender form, and wedge-shaped tails; and the diminutive ground doves, whose size and strength sometimes hardly exceed that of a sparrow. In the bird now described with the *leucocephala*, figured in the present volume, we see a third form, and perhaps that to which the title *Columba* should be restricted, including as more familiar examples, the common tame pigeon, and the cushat of Europe. Some of the other forms in this beautiful group seem more restricted in their distribution. Thus, the ground doves and passenger pigeons will nearly claim America; *Vinago* will claim India and different parts of the Asiatic continent; and that lovely group, with feathered tarsi, known under *Ptilonopus*, Swain., takes India, New Holland, and the range of the South Pacific; while those of the present division will extend over the world. Their form is strongly made, with highly developed means of a powerful flight; plumage remarkably dense and strong. They are gregarious, except during the breeding season, easily domesticated, and their flesh generally good; breed more than once during the season, and feed on grain or on the leaves and soft parts of vegetables, according to circumstances. In disposition they are timid and watchful, but rather pugnacious among themselves.

—ED.

blackish ; the head is of a purple cinereous colour ; the neck, at its junction with the head, has a white semiband, beneath which its back and sides are brilliant golden green, the feathers being brownish purple at base ; the under part of the neck is pale vinaceous purplish, this colour becoming paler as it approaches the vent, which, together with the inferior tail-coverts, is white. The anterior portion of the back, the wing-coverts, and scapulars, are brownish ash ; the primaries are dark brown, edged with whitish on the exterior webs ; the lower part of the back, the rump, tail-coverts, inferior wing-coverts, and sides, are bluish ash, brighter beneath the wings. The shafts of the body feathers and tail-coverts are remarkably robust, tapering rather suddenly near the tip. The tail, which consists of twelve feathers, is slightly rounded at tip, with a definite blackish band at two-thirds the length from the base, visible on both sides ; before this band the colour is bluish ash, and behind dirty greyish ; the tail is much lighter on the inferior surface.

This species is closely allied to *Columba caribæa* of Gmelin, with which Say stated its analogy, and also to *Columba leucocephala* of Linné. In fact, it possesses some characters in common with each of these species, such as the band on the tail of the former, and an indication of white on the head of the latter. This character may induce some naturalists to suppose it the young of the *leucocephala* ; but by a careful comparison, all doubt will be removed, and it will be admitted to the rank of a distinct species.

The *caribæa* may readily be distinguished from the present species, by its superior size, and by being destitute of the white band on the neck ; by having a reddish bill, tipped with yellow, and dark red feet. The *leucocephala*, in the adult state, has the whole head white above ; but as it is destitute of this distinction when young, acquiring it gradually as it advances in age, other discriminating characters must be employed ; the tail is without a band, the bill is red with a white tip, and the feet are red.

WILD TURKEY.—MELEAGRIS GALLOPAVO.

PLATE IX. MALE AND FEMALE.

Meleagris gallopavo, *Linn. Syst.* i. p. 268. sp. 1. *Gmel. Syst.* i. p. 732, sp. 1. *Lath. Ind.* p. 618, sp. 1. *Temm. Hist. Nat. des Pig. et Gall. Index*, iii. p. 676. *Wilson, Am. Orn.* vi. Index, p. xvii. *Stephens, Cont. of Shaw's Zool.* xi. Part i. p. 156, pl. 8. *Ranzani, Elem. di Zool.* iii. Part i. p. 154.—*Meleagris sylvestris*, *Vieill. Nouv. Dict. d'Hist. Nat.* ix. p. 447.—*Gallopavo*, *Aldrovandi, Orn.* ii. p. 35, fig. on p. 39, domestic variety, male; fig. on p. 40, Id. female. *Willughby, Orn.* p. 113, pl. 27, fig. 4, dom. var. male. *Johnston, Theatrum Universale de Avibus*, p. 55, pl. 24, fig. 1, dom. var. male; fig. 2, Id. female. *Briss. Av.* i. p. 158, pl. 16. dom. var. male.—*Gallus Indicus*, *Welscher Han, Johnston, Th. Av.* p. 83, pl. 29, fig. 1, dom. var. male.—*Gallopavo sylvestris Novæ-Angliæ*, a New England wild turkey, *Ray, Syn.* p. 51, sp. 3.—*Gallopavo sylvestris*, *Catesby, Carolina*, i. *App.* p. xlv.—*Meleagris Americanus*, the wild turkey, *Bartr. Trav.* p. 290.—*Gallo Pavo*, *Gallo Pavone* volgarmente Pollo d'India, *Storia degli Uccelli*, ii. pl. 222, dom. crested var. male; pl. 223, dom. white, black-spotted var. young; pl. 224, dom. white, yellowish-spotted var. young; pl. 225, dom. black, var. young; pl. 226, dom. black, white spotted var. young.—*Coc d'Inde*, *Belon, Histoire de la Nature des Oiseaux*, p. 248, with fig. dom. var. male.—*Dindon*, *Buff. Ois.* ii. p. 132, pl. 3. *Pl. Enl.* 97, dom. whitish, var. male. *Temm. Hist. Nat. des Pig. et Gall.* ii. p. 374. *Gerardin, Tabl. Elem. d'Orn.* ii. p. 103, pl. 21, fig. 2. dom. var. male.—*Turkie*, *Josselyn, Voyages to New England*, p. 99. *New England's Rarities*, p. 8.—*Wild turkey*, *Clayton, Virginia, Phil. Trans.* xvii. p. 992. *Id. Abridg.* iii. p. 590. *Lawson, Carolina*, p. 149. *Penn. Phil. Trans.* lxxi. p. 67. *Arct. Zool.* sp. 178.—*American turkey*, *Lath. Syn.* ii. Part ii. p. 676, sp. 1.—*Domestic turkey*, *Penn. Brit. Zool.* i. sp. 97.

MELEAGRIS GALLOPAVO.—LINNÆUS.*

Meleagris gallopavo, *Bonap. Synop.* p. 123.—The wild turkey, *Aud. m.* pl. 1. fem. and young, p. vi.—*Orn. Biog.* i. pp. 1 and 33.—*Gard. and Menag. of Zool. Soc. Birds*, p. 209.

THE native country of the wild turkey extends from the north-western territory of the United States to the Isthmus of

* The natural history of the turkey is so well and fully detailed by our author, that almost nothing can be added, even from the later observations of Audubon. From the evidence that has been collected, there seems to be little

Panama, south of which it is not to be found, notwithstanding the statements of authors, who have mistaken the curassow for

doubt that Great Britain is indebted, in a secondary way, for the introduction of these valuable domestic birds; and I have added the observations of Mr Bennet, on the subject of its original introduction, from the Gardens and Menagerie of the Zoological Society.

“The turkey domesticated by the Spaniards, seems to have found its way to England almost immediately. This fact may be easily accounted for by the extensive intercourse subsisting between the two great maritime nations at that early period; but it is somewhat singular that no traces of its transmission from Spain should remain, either in the name of the bird, or in popular tradition. On the other hand, it is barely possible that it may have been brought directly from America to England by Chabot, who made such extensive discoveries on the coast of the newly found continent. According to a popular rhyme, quoted by Baker, in his Chronicle,

‘Turkeys, carps, hoppers, pinaret, and beer,
Came into England all in one year.’

Which remarkable year is said to have been about the 15th of King Henry the Eighth, or 1524. Barnaby Googe, an old writer on husbandry, who published in 1614, speaking of ‘those outlandish birds called ginny-cocks and turkey-cocks,’ says, that ‘before the yeare of our Lord 1530, they were not seene with us;’ but in this he merely translates from Heresbach, a German author, whose treatise forms the basis of his work. A more positive authority is Hakluyt, who, in certain instructions given by him to a friend at Constantinople, bearing date in 1582, mentions, among other valuable things introduced into England from foreign parts, ‘turkey cocks and hennes,’ as having been brought in ‘about fifty years past.’ We may therefore fairly conclude, that they became known in this country about the year 1530. Why they were denominated turkeys, an appellation which bears no resemblance to their name in any other language, we have no probable grounds even for conjecture. Willughby supposes the name to be derived from a notion that they were brought from Turkey. Such an erroneous opinion may possibly have arisen from that confusion which appears to have at first existed between them and the Guinea-fowls, the latter being probably commonly obtained from the Levant; and being also, in the sixteenth century, exceedingly rare in England.

The turkey, on the contrary, speedily became a common inhabitant of our poultry yards, and a standing dish at all festivals. So early as the year 1541, we find it mentioned in a constitution of Archbishop Cranmer, published in Leland’s *Collectanea*, by which it was ordered, that of such large fowls as cranes, swans, and turkey-cocks, ‘there should be but one in a dish.’ The serjeants-at-law, created in 1555, provided, according to Dugdale, in his *Origines Juridicales*, for their inauguration dinner, among other delicacies, two turkeys, and four turkey

it. In Canada, and the now densely peopled parts of the United States, wild turkeys were formerly very abundant ; but, like the Indian and buffalo, they have been compelled to yield to the destructive ingenuity of the white settlers, often wantonly exercised, and seek refuge in the remotest parts of the interior. Although they relinquish their native soil with slow and reluctant steps, yet such is the rapidity with which settlements are extended and condensed over the surface of this country, that we may anticipate a day, at no distant period, when the hunter will seek the wild turkey in vain.

We have neglected no means of obtaining information from various parts of the Union, relative to this interesting bird ; and having been assisted by the zeal and politeness of several individuals, who, in different degrees, have contributed to our

chicks, which, as they were rated at only four shillings each, while swans and cranes were charged ten shillings, and capons half-a-crown, could not have been esteemed very great rarities. Indeed they had become so plentiful in 1573, that honest Tusser, in his *Five Hundred Points of Good Husbandry*, enumerates them among the usual Christmas fare at a farmer's table, and speaks of them as ' ill neighbors' both to ' peason' and to hops.

A Frenchman, named Pierre Gilles, has the credit of having first described the turkey in this quarter of the globe, in his additions to a Latin translation of *Ælian*, published by him in 1535. His description is so true to nature, as to have been almost wholly relied on by every subsequent writer down to Willughby. He speaks of it as a bird that he had seen ; and he had not then been further from his native country than Venice ; and states it to have been brought from the New World. That turkeys were known in France at this period, is further proved by a passage in Champier's treatise *De re Cibaria*, published in 1560, and said to have been written thirty years before. This author also speaks of them as having been brought but a few years back from the newly discovered Indian islands. From this time forward, their origin seems to have been entirely forgotten ; and for the next two centuries we meet with little else in the writings of ornithologists concerning them, than an accumulation of citations from the ancients, which bear no manner of relation to them. In the year 1566, a present of twelve turkeys was thought not unworthy of being offered by the municipality of Amiens to their King, at whose marriage, in 1570, Anderson states, in his *History of Commerce*, but we know not on what authority, they were first eaten in France. Heresbach, as we have before seen, asserts that they were introduced into Germany about 1530 ; and a sumptuary law made at Venice, 1557, quoted by Zanoni, particularizes the tables at which they were permitted to be served.—ED.

stock of knowledge on this subject, we return them our best thanks. We have particular satisfaction in acknowledging the kindness of Mr John J. Audubon, from whom we have received a copious narrative, containing a considerable portion of the valuable notes collected by him, on this bird, during twenty years that he has been engaged in studying ornithology, in the only book free from error and contradiction, the great book of nature. His observations, principally made in Kentucky and Louisiana, proved the more interesting, as we had received no information from those states; we have, in consequence, been enabled to enrich the present article with several new details of the manners and habits of the wild turkey.

The wooded parts of Arkansaw, Louisiana, Tennessee, and Alabama; the unsettled portions of the states of Ohio, Kentucky, Indiana, and Illinois; the vast expanse of territory northwest of these states, on the Mississippi and Missouri, as far as the forests extend, are more abundantly supplied than any other parts of the Union with this valuable game, which forms an important part of the subsistence of the hunter and traveller in the wilderness. It is not probable that the range of this bird extends to, or beyond, the Rocky Mountains; the Mandan Indians, who, a few years ago, visited the city of Washington, considered the turkey one of the greatest curiosities they had seen, and prepared a skin of one, to carry home for exhibition.

The wild turkey is not very plenty in Florida, Georgia, and the Carolinas; is still less frequently found in the western parts of Virginia and Pennsylvania; and is extremely rare, if indeed it exists at all, in the remaining northern and eastern parts of the United States; in New England, it even appears to have been already destroyed one hundred and fifty years back. I am, however, credibly informed, that wild turkeys are yet to be found in the mountainous districts of Sussex county, New Jersey. The most eastern part of Pennsylvania now inhabited by them, appears to be Lancaster county; and they

are often observed in the oak woods near Philipsburg, Clearfield county. Those occasionally brought to the Philadelphia and New York markets, are chiefly obtained in Pennsylvania and New Jersey.

The wild turkeys do not confine themselves to any particular food; they eat maize, all sorts of berries, fruits, grasses, beetles; and even tadpoles, young frogs, and lizards, are occasionally found in their crops; but where the pecan nut is plenty, they prefer that fruit to any other nourishment; their more general predilection is, however, for the acorn, on which they rapidly fatten. When an unusually profuse crop of acorns is produced in a particular section of country, great numbers of turkeys are enticed from their ordinary haunts in the surrounding districts. About the beginning of October, while the mast still remains on the trees, they assemble in flocks, and direct their course to the rich bottom lands. At this season they are observed in great numbers on the Ohio and Mississippi. The time of this irruption is known to the Indians by the name of the *turkey month*.

The males, usually termed *gobblers*, associate in parties, numbering from ten to a hundred, and seek their food apart from the females; whilst the latter either move about singly with their young, then nearly two-thirds grown, or, in company with other females and their families, form troops, sometimes consisting of seventy or eighty individuals, all of whom are intent on avoiding the old males, who, whenever opportunity offers, attack and destroy the young, by repeated blows on the skull. All parties, however, travel in the same direction, and on foot, unless they are compelled to seek their individual safety by flying from the hunter's dog, or their march is impeded by a large river. When about to cross a river, they select the highest eminences, that their flight may be the more certain; and here they sometimes remain for a day or more, as if for the purpose of consultation, or to be duly prepared for so hazardous a voyage. During this time the males *gobble* obstreperously, and strut with extraordinary im-

portance, as if they would animate their companions, and inspire them with the utmost degree of hardihood; the females and young also assume much of the pompous air of the males, the former spreading their tails, and moving silently around. At length the assembled multitude mount to the tops of the highest trees, whence, at a signal note from a leader, the whole together wing their way towards the opposite shore. All the old and fat ones cross without difficulty, even when the river exceeds a mile in width; but the young, meagre, and weak, frequently fall short of the desired landing, and are forced to swim for their lives; this they do dexterously enough, spreading their tails for a support, closing their wings to the body, stretching the neck forwards, and striking out quickly and forcibly with their legs. If, in thus endeavouring to regain the land, they approach an elevated or inaccessible bank, their exertions are remitted, they resign themselves to the stream for a short time, in order to gain strength, and then, with one violent effort, escape from the water. But in this attempt all are not successful; some of the weaker, as they cannot rise sufficiently high in air to clear the bank, fall again and again into the water, and thus miserably perish. Immediately after these birds have succeeded in crossing a river, they for some time ramble about without any apparent unanimity of purpose, and a great many are destroyed by the hunters, although they are then least valuable.

When the turkeys have arrived in their land of abundance, they disperse in small flocks, composed of individuals of all sexes and ages intermingled, who devour all the mast as they advance; this occurs about the middle of November. It has been observed, that, after these long journeys, the turkeys become so familiar as to venture on the plantations, and even approach so near the farm-houses as to enter the stables and corn-cribs in search of food; in this way they pass the autumn, and part of the winter. During this season great numbers are killed by the inhabitants, who preserve them in a frozen state in order to transport them to a distant market.

Early in March they begin to pair ; and, for a short time previous, the females separate from, and shun their mates, though the latter pertinaciously follow them, uttering their gobbling note. The sexes roost apart, but at no great distance, so that, when the female utters a call, every male within hearing responds, rolling note after note, in the most rapid succession ; not as when spreading the tail and strutting near the hen, but in a voice resembling that of the tame turkey, when he hears any unusual or frequently repeated noise. Where the turkeys are numerous, the woods, from one end to the other, sometimes for hundreds of miles, resound with this remarkable voice of their wooing, uttered responsively from their roosting places. This is continued for about an hour ; and, on the rising of the sun, they silently descend from their perches, and the males begin to strut, for the purpose of winning the admiration of their mates.

If the call be given from the ground, the males in the vicinity fly towards the individual, and, whether they perceive her or not, erect and spread their tails, throw the head backwards, distend the comb and wattles, strut pompously, and rustle their wings and body feathers, at the same moment ejecting a puff of air from the lungs. Whilst thus occupied, they occasionally halt to look out for the female, and then resume their strutting and puffing, moving with as much rapidity as the nature of their gait will admit. During this ceremonious approach, the males often encounter each other, and desperate battles ensue, when the conflict is only terminated by the flight or death of the vanquished.

This pugnacious disposition is not to be regarded as accidental, but as resulting from a wise and excellent law of nature, who always studies the good of the species, without regard to the individuals. Did not females prefer the most perfect of their species, and were not the favours of beauty most willingly dispensed to the victorious, feebleness and degeneracy would soon mark the animal creation ; but, in consequence of this general rule, the various races of animals are

propagated by those individuals who are not only most to be admired for external appearance, but most to be valued for their intrinsic spirit and energy.

When the object of his pursuit is discovered, if the female be more than one year old, she also struts, and even gobbles, evincing much desire ; she turns proudly round the strutting male, and, suddenly opening her wings, throws herself towards him, as if to terminate his procrastination, and, laying herself on the earth, receives his dilatory caresses. But should he meet a young hen, his strut becomes different, and his movements are violently rapid ; sometimes rising in air, he takes a short circular flight, and on alighting drags his wings for a distance of eight or ten paces, running at full speed, occasionally approaching the timorous hen, and pressing her, until she yields to his solicitations. Thus are they mated for the season, though the male does not confine himself exclusively to one female, nor does he hesitate to bestow his attentions and endearments on several, whenever an opportunity offers.

One or more females, thus associated, follow their favourite, and roost in his immediate neighbourhood, if not on the same tree, until they begin to lay, when they change their mode of life, in order to save their eggs, which the male uniformly breaks, if in his power, that the female may not be withdrawn from the gratification of his desires. At this time the females shun the males during the greater part of the day ; the latter become clumsy and careless, meet each other peacefully, and so entirely cease to gobble, that the hens are obliged to court their advances, calling loudly and almost continually for them. The female may then be observed caressing the male, and imitating his peculiar gestures, in order to excite his amorousness.

The cocks, even when on the roost, sometimes strut and gobble, but more generally merely elevate the tail, and utter the *puff*, on which the tail and other feathers suddenly subside. On light or moonshining nights, near the termination of the breeding season, they repeat this action, at intervals of a few

minutes, for several hours together, without rising from their perches.

The sexes then separate; the males, being much emaciated, cease entirely to gobble, retire and conceal themselves by prostrate trees, in secluded parts of the forest, or in the almost impenetrable privacy of a cane-brake. Rather than leave their hiding places, they suffer themselves to be approached within a short distance, when they seek safety in their speed of foot; at this season, however, they are of no value to the hunter, being meagre and covered with ticks. By thus retiring, using very little exercise, and feeding on peculiar grasses, they recover their flesh and strength, and when this object is attained, again congregate, and recommence their rambles.

About the middle of April, when the weather is dry, the female selects a proper place in which to deposit her eggs, secured from the encroachment of water, and, as far as possible, concealed from the watchful eye of the crow: this crafty bird spies the hen going to her nest, and having discovered the precious deposit, waits for the absence of the parent, and removes every one of the eggs from the spot, that he may devour them at leisure. The nest is placed on the ground, either on a dry ridge, in the fallen top of a dead leafy tree, under a thicket of sumach or briars, or by the side of a log; it is of a very simple structure, being composed of a few dried leaves. In this receptacle the eggs are deposited, sometimes to the number of twenty, but more usually from nine to fifteen; they are whitish, spotted with reddish brown, like those of the domestic bird. Their manner of building, number of eggs, period of incubation, &c. appear to correspond throughout the Union, as I have received exactly similar accounts from the northern limits of the turkey range, to the most southern regions of Florida, Louisiana, and the western wilds of Missouri.

The female always approaches her nest with great caution, varying her course so as rarely to reach it twice by the same

route; and, on leaving her charge, she is very careful to cover the whole with dry leaves, with which she conceals it so artfully, as to make it extremely difficult, even for one who has watched her movements, to indicate the exact spot; hence few nests are found, and these are generally discovered by fortuitously starting the female from them, or by the appearance of broken shells, scattered around by some cunning lynx, fox, or crow. When laying or sitting, the turkey hen is not readily driven from her post by the approach of apparent danger; but, if an enemy appears, she crouches as low as possible, and suffers it to pass. A circumstance related by Mr Audubon will show how much intelligence they display on such occasions; having discovered a sitting hen, he remarked that, by assuming a careless air, whistling, or talking to himself, he was permitted to pass within five or six feet of her; but, if he advanced cautiously, she would not suffer him to come within twenty paces, but ran off twenty or thirty yards with her tail expanded, when, assuming a stately gait, she paused on every step, occasionally uttering a chuck. They seldom abandon their nests on account of being discovered by man, but should a snake, or any other animal, suck one of the eggs, the parent leaves them altogether. If the eggs be removed, she again seeks the male and recommences laying, though otherwise she lays but one nest of eggs during the season. Several turkey hens sometimes associate, perhaps for mutual safety, deposit their eggs in the same nest, and rear their broods together. Mr Audubon once found three females sitting on forty-two eggs. In such cases, the nest is constantly guarded by one of the parties, so that no crow, raven, nor even polecat, dares approach it.

The mother will not forsake her eggs, when near hatching, while life remains; she will suffer an enclosure to be made around and imprison her, rather than abandon her charge. Mr Audubon witnessed the hatching of a brood, while thus endeavouring to secure the young and mother. "I have laid flat," says he, "within a very few feet, and seen her gently

rise from the eggs, look anxiously towards them, chuck with a sound peculiar to the mother on such an occasion, remove carefully each half empty shell, and with her bill caress and dry the younglings, that already stand tottering and attempting to force their way out of the nest."

When the process of incubation is ended, and the mother is about to retire from the nest with her young brood, she shakes herself violently, picks and adjusts the feathers about the belly, and assumes a different aspect; her eyes are alternately inclined obliquely upwards and sidewise; she stretches forth her neck, in every direction, to discover birds of prey or other enemies; her wings are partially spread, and she softly clucks to keep her tender offspring close to her side. They proceed slowly, and, as the hatching generally occurs in the afternoon, they sometimes return to pass the first night in the nest. While very young, the mother leads them to elevated dry places, as if aware that humidity, during the first few days of their life, would be very dangerous to them, they having then no other protection than a delicate, soft, hairy down. In very rainy seasons wild turkeys are scarce, because, when completely wetted, the young rarely survive.

At the expiration of about two weeks, the young leave the ground on which they had previously reposed at night under the female, and follow her to some low, large branch of a tree, where they nestle under the broadly curved wings of their vigilant and fostering parent. The time then approaches in which they seek the open ground or prairie land during the day, in search of strawberries, and subsequently of dewberries, blackberries, and grasshoppers; thus securing a plentiful food, and enjoying the influence of the genial sun. They frequently dust themselves in shallow cavities of the soil, or on ant-hills, in order to clean off the loose skin of their growing feathers, and rid themselves of ticks and other vermin.

The young turkeys now grow rapidly, and in the month of August, when several broods flock together, and are led by their mothers to the forest, they are stout and quite able to

secure themselves from the unexpected attacks of wolves, foxes, lynxes, and even cougars, by rising quickly from the ground, aided by their strong legs, and reaching with ease the upper limbs of the tallest tree. Amongst the numerous enemies of the wild turkey, the most dreaded are the large diurnal and nocturnal birds of prey, and the lynx (*Felis rufa*), who sucks their eggs, and is extremely expert at seizing both parent and young; he follows them for some distance, in order to ascertain their course, and then, making a rapid circular movement, places himself in ambush before them, and waits until, by a single bound, he can fasten on his victim.

The following circumstance is related by Bartram:—"Having seen a flock of turkeys at some distance, I approached them with great caution; when, singling out a large cock, and being just on the point of firing, I observed that several young cocks were affrighted, and in their language warned the rest to be on their guard against an enemy, whom I plainly perceived was industriously making his subtle approaches towards them, behind the fallen trunk of a tree, about twenty yards from me. This cunning fellow-hunter was a large fat wild cat, or lynx: he saw me, and at times seemed to watch my motions, as if determined to seize the delicious prey before me; upon which I changed my object, and levelled my piece at him. At that instant my companion, at a distance, also discharged his piece, the report of which alarmed the flock of turkeys, and my fellow hunter, the cat, sprang over the log, and trotted off."

These birds are guardians of each other, and the first who sees a hawk or eagle gives a note of alarm, on which all within hearing lie close to the ground. As they usually roost in flocks, perched on the naked branches of trees, they are easily discovered by the large owls, and, when attacked by these prowling birds, often escape by a somewhat remarkable manœuvre. The owl sails around the spot to select his prey; but, notwithstanding the almost inaudible action of his pinions, the quick ear of one of the slumberers perceives the danger, which is

immediately announced to the whole party by a *chuck* ; thus alarmed, they rise on their legs, and watch the motions of the owl, who, darting like an arrow, would inevitably secure the individual at which he aimed, did not the latter suddenly drop his head, squat, and spread his tail over his back ; the owl then glances over without inflicting any injury, at the very instant that the turkey suffers himself to fall headlong towards the earth, where he is secure from his dreaded enemy.

On hearing the slightest noise, wild turkeys conceal themselves in the grass, or among shrubs, and thus frequently escape the hunter, or the sharp-sighted birds of prey. The sportsman is unable to find them during the day, unless he has a dog trained for the purpose ; it is necessary to shoot them at a very short distance, since, when only wounded, they quickly disappear, and, accelerating their motion by a sort of half flight, run with so much speed, that the swiftest hunter cannot overtake them. The traveller, driving rapidly down the declivity of one of the Alleghanies, may sometimes see several of them before him, that evince no urgent desire to get out of the road ; but on alighting, in hopes of shooting them, he soon finds that all pursuit is vain.

In the spring, when the males are much emaciated by their attendance on the females, it sometimes may happen that, in cleared countries, they can be overtaken by a swift cur-dog, when they will squat, and suffer themselves to be caught by the dog, or hunter, who follows on horseback. But from the knowledge we have gained of this bird, we do not hesitate to affirm, that the manner of running down turkeys, like hares or foxes, so much talked of, is a mere fable, as such a sport would be attended with very trifling success. A turkey hound will sometimes lead his master several miles, before he can a second time *flush* the same individual from his concealment ; and even on a fleet horse, after following one for hours, it is often found impossible to *put it up*. During a fall of melting snow, turkeys will travel extraordinary distances, and are often pursued in vain by any description of hunters ; they have then a long,

straddling manner of running, very easy to themselves, but which few animals can equal. This disposition for running, during rains, or humid weather, is common to all gallinaceous birds.

The males are frequently decoyed within gunshot, in the breeding season, by forcibly drawing the air through one of the wing bones of the turkey, producing a sound very similar to the voice of the female; but the performer on this simple instrument must commit no error, for turkeys are quick of hearing, and, when frequently alarmed, are wary and cunning. Some of these will answer to the call without advancing a step, and thus defeat the speculations of the hunter, who must avoid making any movement, inasmuch as a single glance of a turkey may defeat his hopes of decoying them. By imitating the cry of the barred owl (*Strix nebulosa*), the hunter discovers many on their roosts, as they will reply by a gobble to every repetition of this sound, and can thus be approached with certainty, about daylight, and easily killed.

Wild turkeys are very tenacious of their feeding grounds, as well as of the trees on which they have once roosted. Flocks have been known to resort to one spot for a succession of years, and to return after a distant emigration in search of food. Their roosting place is mostly on a point of land, jutting into a river, where there are large trees. When they have collected at the signal of a repeated gobbling, they silently proceed towards their nocturnal abodes, and perch near each other: from the numbers sometimes congregated in one place, it would seem to be the common rendezvous of the whole neighbourhood. But no position, however secluded or difficult of access, can secure them from the attacks of the artful and vigilant hunter, who, when they are all quietly perched for the night, takes a stand previously chosen by daylight, and, when the rising moon enables him to take sure aim, shoots them down at leisure, and, by carefully singling out those on the lower branches first, he may secure nearly the whole flock, neither the presence of the hunter, nor the report of his gun,

intimidating the turkeys, although the appearance of a single owl would be sufficient to alarm the whole troop: the dropping of their companions from their sides excites nothing but a buzzing noise, which seems more expressive of surprise than fright. This fancied security, or heedlessness of danger, while at roost, is characteristic of all the gallinaceous birds of North America.

The more common mode of taking turkeys is by means of *pens*, constructed with logs, covered in at top, and with a passage in the earth under one side of it, just large enough to admit an individual when stooping. The ground chosen for this purpose is generally sloping, and the passage is cut on the lower side, widening outwards. These preparations being completed, Indian corn is strewed for some distance around the pen, to entice the flock, which, picking up the grain, is gradually led towards the passage, and thence into the enclosure, where a sufficient quantity of corn is spread to occupy the leader until the greater part of the turkeys have entered. When they raise their heads and discover that they are prisoners, all their exertions to escape are directed upwards and against the sides of the pen, not having sagacity enough to stoop sufficiently low to pass out by the way they entered, and thus they become an easy prey, not only to the experienced hunter, but even to the boys on the frontier settlements.

In proportion to the abundance or scarcity of food, and its good or bad quality, they are small or large, meagre or fat, and of an excellent or indifferent flavour: in general, however, their flesh is more delicate, more succulent, and better tasted than that of the tame turkey: they are in the best order late in the autumn, or in the beginning of winter. The Indians value this food so highly, when roasted, that they call it "the white man's dish," and present it to strangers as the best they can offer. It seems probable that in Mexico the wild turkey cannot obtain such substantial food as in the United States, since Hernandez informs us that their flesh is harder, and in all respects inferior to that of the domestic bird.

The Indians make much use of their tails as fans; the women weave their feathers with much art on a loose web made of the rind of the birch-tree, arranging them so as to keep the down on the inside, and exhibit the brilliant surface to the eye. A specimen of this cloth is in the Philadelphia Museum; it was found enveloping the body of an Indian female, in the great Saltpetre cave of Kentucky.

Among the benefits conferred by America on the rest of the world, the gift of this noble bird should occupy a distinguished place, as unquestionably one of the most useful of the feathered tribe, being capable of ministering largely to the sustenance and comfort of the human race. Though the turkey is surpassed in external beauty by the magnificent peacock, its flesh is greatly superior in excellence, standing almost unrivalled for delicacy of texture and agreeable sapidity. On this account it has been eagerly sought by almost all nations, and has been naturalized with astonishing rapidity throughout the world, almost universally constituting a favourite banquet dish.

The turkey, belonging originally to the American continent, was necessarily unknown to the ancients, who, in this as in a thousand other instances, were deficient in our most common and essential articles of food. Readers unacquainted with the fact may well be surprised to learn, that, although the introduction of this bird into Europe is comparatively modern, its origin has already been lost sight of, and that eminent naturalists of the last century, who lived so much nearer to the time of its first appearance, have expressed great uncertainty concerning its native country. Thus Belon, Aldrovandi, Gessner, Ray, &c., thought that it came originally from Africa and the East Indies, and endeavoured to recognise it in some of the domestic birds of the ancients. Belon and Aldrovandi supposed it to have been mentioned by ancient authors, but they mistook for it the *Numida meleagris* of Linné, which is actually an African bird, now almost naturalized in America, even in a wild state, so that it would be apparently more reasonable for America to regard that bird as indigenous, than

that the old continent should lay claim to the turkey. In so soon losing sight of the origin of this bird, we see a strong exemplification of the ungrateful disposition of man, who can durably treasure up the memory of wrongs and injuries, but fails to recollect the greatest benefits he has received. It would be loss of time to combat the arguments advanced by authors, who have deceived themselves in attempting to deprive America of her just title to this bird, since they have been fully refuted by the eloquent Buffon; but we may here introduce a sketch of its progress from America throughout Europe.

The first unquestionable description of the turkey was written by Oviedo, in 1525, in the summary of his *History of the Indies*. This bird was sent from Mexico to Spain early in the sixteenth century; from Spain it was introduced into England in 1524. Turkeys were taken to France in the reign of Francis the First, whence they spread into Germany, Italy, &c.; a few, however, had been carried to the latter country by the Spaniards some years previously. The first turkey eaten in France appears to have been served up at the wedding banquet of Charles the Ninth, in the year 1570. Since that period, they have been bred with so much care, that in England, as we read in ancient chronicles, their rapid increase rendered them attainable at country feasts, where they were a much esteemed dish as early as 1585. Europeans conveyed them to all their colonies, and thus were they gradually introduced into Asia, Africa, and even Oceanica.

The French distinguished them by the name of *Cog et Poule d'Inde* (cock and hen from India), because they were natives of the West Indies. Subsequently, for the sake of brevity, they called them *Dindon*, an appellation which is yet retained. The English name is still worse, as it conveys the false idea that the turkey originated in Asia, owing to the ridiculous habit, formerly prevalent, of calling every foreign object by the name of Turk, Indian, &c.

Although the turkey is generally considered a stupid bird,

it is probable that his intellectual qualifications have not been fairly appreciated, as he is susceptible of very lively emotions. If any new and remarkable object attracts the attention of the male, his whole appearance and demeanour undergo a sudden and extraordinary change : relinquishing his peaceful aspect, he boldly raises himself, his head and neck become turgid, and the wattles, from an influx of blood, glow with vivid red ; he bristles up the feathers of the neck and back, his tail is vertically raised and expanded like a fan, and the wing-feathers are extended until they touch the ground. Thus transformed, he utters a low, humming sound, and advances with a grave and haughty strut, occasionally accelerating his steps, and, at the same time, rubbing the tips of the primary feathers violently against the earth. During these manœuvres, he now and then utters a harsh, interrupted, and dissonant note, apparently expressive of the highest degree of rage : this cry, sounding like *rook, oorook, oorook*, will be repeated at the pleasure of any person who should whistle, or strike the ear of the bird by any other acute or unusual sound. The appearance of any red cloth is sure to awaken his anger, and induce him to rush fearlessly on the disagreeable object, exerting all his power to injure or destroy it.

In connexion with the peculiar character of this bird, we may advantageously quote the sentiments of the great Franklin, who expressed a regret that the turkey should not have been preferred to the bald eagle as an emblem of the United States. Certainly this eagle is a tyrannical and pusillanimous bird, by no means an appropriate representative of a great and magnanimous nation, as was the eagle chosen by the Romans.

“ Others object to the bald eagle,” says Franklin, in one of his letters, “ as looking too much like a dindon, or turkey. For my own part, I wish the bald eagle had not been chosen as the representative of our country ; he is a bird of bad moral character ; he does not get his living honestly ; you may have seen him perched on some dead tree, where, too lazy to fish for himself, he watches the labour of the fishing hawk, and,

when that diligent bird has at length taken a fish, and is bearing it to his nest for the support of his mate and young ones, the bald eagle pursues him, and takes it from him. With all this injustice, he is never in good case, but, like those among men who live by sharpening and robbing, he is generally poor, and often very lousy. Besides, he is a rank coward; the little kingbird, not bigger than a sparrow, attacks him boldly, and drives him out of the district. He is, therefore, by no means, a proper emblem for the brave and honest Cincinnati of America, who have driven all the *Kingbirds* from our country, though exactly fit for that order of knights which the French call *Chevaliers d'Industrie*. I am, on this account, not displeased that the figure is not known as a bald eagle, but looks more like a turkey. For in truth the turkey is, in comparison, a much more respectable bird, and withal, a true original native of America. Eagles have been found in all countries, but the turkey was peculiar to ours. He is, besides, (though a little vain and silly, 'tis true, but not the worse emblem for that,) a bird of courage, and would not hesitate to attack a grenadier of the British guards, who should presume to invade his farm-yard with a red coat on."

But, since the choleric temper and vanity of the tame turkey are proverbial in various languages, in some of which its very name is opprobrious, and often applied in derision to vain-glorious and stupid people, we are better satisfied that its effigy was not placed in the escutcheon of the United States.

Those who have not observed the turkey in its wild state, have only seen its deteriorated progeny, which are greatly inferior in size and beauty. So far from having gained by the care of man, and the abundance of food accessible in its state of domestication, this bird has degenerated not only in Europe and Asia, but, what is certainly extraordinary, even in its native country. The domesticated turkey of America, accustomed as it is to roam in the woods and open fields almost without restraint, is in no respect superior to that of the European poultry-yard. I have, however, seen several very beautiful

ones from Lancaster county, Pennsylvania, and Sussex county, New Jersey, that were said to be a cross-breed between the wild cock and tame hen. This crossing often occurs in countries where wild and tame turkeys are found; it is well known that they will readily approach each other; and such is the influence of slavery even upon the turkey, that the robust inhabitant of the forest will drive his degenerate kinsfolk from their own food, and from their females, being generally welcomed by the latter and by their owners, who well know the advantages of such a connexion. The produce of this commixture is much esteemed by epicures, uniting the luscious obesity of the one, with the wild flavour of the other. A gentleman, residing in Westchester county, New York, a few years since procured a young female wild turkey, in order to make the experiment of crossing the breed; but, owing to some circumstance, it did not succeed, and in the ensuing spring this female disappeared. In the following autumn she returned, followed by a large brood; these were quite shy, but, by a little management, they were secured in a coop, and the mother allowed her liberty. She remained on the farm until the succeeding spring, when she again disappeared, and returned in autumn with another brood. This course she has repeated for several successive years.

Eggs of the wild turkey have been frequently taken from their nests, and hatched under the tame hen; the young preserve a portion of their uncivilized nature, and exhibit some knowledge of the difference between themselves and their foster mother, roosting apart from the tame ones, and in other respects showing the force of hereditary disposition. The domesticated young, reared from the eggs of the wild turkey, are often employed as decoy birds to those in a state of nature. Mr William Bloom, of Clearfield, Pennsylvania, caught five or six wild turkeys, when quite chickens, and succeeded in rearing them. Although sufficiently tame to feed with his tame turkeys, and generally associate with them, yet they always retained some of their original propensities, roosting by themselves, and higher than the tame birds, generally on the

top of some tree, or of the house. They were also more readily alarmed ; on the approach of a dog, they would fly off, and seek safety in the nearest woods. On an occasion of this kind, one of them flew across the Susquehanna, and the owner was apprehensive of losing it ; in order to recover it, he sent a boy with a tame turkey, which was released at the place where the fugitive had alighted. This plan was successful ; they soon joined company, and the tame bird induced his companion to return home. Mr Bloom remarked, that the wild turkey will thrive more, and keep in better condition, than the tame, on the same quantity of food.

Besides the above mentioned half breed, some domesticated turkeys, of a very superior metallic tint, are sold in the Philadelphia and New York markets as wild ones. Many of these require a practised eye to distinguish their true character, but they are always rather less brilliant, and those I examined had a broad whitish band at the tip of the tail-coverts, and another at the tip of the tail itself, which instantly betrayed their origin, the wild ones being entirely destitute of the former, and the band on the tip of the tail being neither so wide nor so pure.

In the following description, we give the generic, as well as the specific characters of the wild turkey, in order to make it complete.

The male wild turkey, when full grown, is nearly four feet in length, and more than five in extent. The bill is short and robust, measuring two inches and a half to the corner of the mouth ; it is reddish, and horn colour at tip ; the superior mandible is vaulted, declining at tip, and overhangs the inferior, being longer and wider ; it is covered at base by a naked cere-like membrane, in which the nostrils are situated, they being half closed by a turgid membrane, and opening downwards ; the inferior mandible slightly ascends towards the tip ; the aperture of the ear is defended by a fascicle of small decomposed feathers ; the tongue is fleshy and entire ; the irides are dark brown ; the head, which is very small in proportion to

the body, and half of the neck, are covered by a naked bluish skin, on which are a number of red wart-like elevations on the superior portion, and whitish ones on the inferior, interspersed with a few scattered, black, bristly hairs, and small feathers, which are still less numerous on the neck; the naked skin extends farther downwards on the inferior surface of the neck, where it is flaccid and membranous, forming an undulating appendage, on the lower part of which are cavernous elevations, or *wattles*. A wrinkled, fleshy, conic, extensible caruncle, hairy and pencillated at tip, arises from the bill at its junction with the forehead; when the bird is quiescent, this process is not much more than an inch and a half long; but when he is excited by love or rage, it becomes elongated, so as to cover the bill entirely, and depend two or three inches below it. The neck is of a moderate length and thickness, bearing on its inferior portion a pendent fascicle of black rigid hairs, about nine inches long. The body is thick, somewhat elongated, and covered with long truncated feathers; these are divided into very light fuliginous down at base, beyond which they are dusky; to this dusky portion succeeds a broad, effulgent, metallic band, changing now to copper-colour or bronze gold, then to violet or purple, according to the incidence of light; and at tip is a terminal, narrow, velvet black band, which does not exist in the feathers of the neck and breast; the lower portion of the back, and the upper part of the rump, are much darker, with less brilliant golden violaceous reflections; the feathers of the inferior part of the rump have several concealed, narrow, ferruginous, transverse lines, then a black band before the broad metallic space, which is effulgent coppery; beyond the terminal narrow black band is an unpolished bright bay fringe. The upper tail-coverts are of a bright bay colour, with numerous narrow bars of bright shining greenish; all these coverts are destitute of the metallic band, and the greater number have not the black subterminal one; the vent and thighs are plain brownish cinereous, intermixed with paler; the under tail-coverts are blackish, glossed with coppery towards the tip, and at tip are bright bay.

The wings are concave and rounded, hardly surpassing the origin of the tail; they have twenty-eight quill feathers, of which the first is shortest, and the fourth and fifth longest, the second and ninth being nearly equal; the smaller and middling wing-coverts are coloured like the feathers of the body; the greater coverts are copper violaceous, having a black band near the whitish tip; their concealed web is blackish, sprinkled with dull ferruginous: in old birds, the exterior web is much worn by friction amongst the bushes, in consequence of which those feathers exhibit a very singular, unwebbed, curved appearance, faithfully represented in the plate. The spurious wing, the primary coverts, and the primaries, are plain blackish, banded with white, which is interrupted by the shaft, and sprinkled with blackish; the secondaries have the white portion so large, that they may as well be described as white, banded with blackish, and are, moreover, tinged with ferruginous yellow; this colour gradually encroaches on the white, and then on the blackish, in proportion as the feathers approach the body, so that the tertials are almost entirely of that colour, being only sprinkled with blackish, and having metallic reflections on the inner web; the anterior under wing-coverts are brownish black, the posterior ones being grey; the tail measures more than a foot and a quarter, is rounded, and composed of eighteen wide feathers; it is capable of being expanded and elevated, together with the superior tail-coverts, so as to resemble a fan, when the bird parades, struts, or wheels. The tail is ferruginous, mottled with black, and crossed by numerous narrow undulated lines, of the same colour, which become confused on the middle feathers; near the tip is a broad black band, then the feathers are again mottled for a short distance, and are widely tipped with ferruginous yellow.

The feet are robust and somewhat elongated; the tarsus measures more than six inches in length, being covered before by large alternate pentagonal plates, and furnished, on the inner posterior side, with a rather obtuse, robust, compressed spur, nearly one inch long. The toes are three before, con-

nected at base by a membrane, and one behind, touching the ground only at tip, being articulated higher on the tarsus than the others, and one-half shorter than the lateral toes, which are equal; the middle toe is more than four inches long, and the posterior but little more than one inch; they are all covered by entire plates; the sole is granulated: the colour of the feet is red, the margins of the plates and scales, the membrane and nails, being blackish; the nails are oblong, wide, obtuse at tip, rounded above, and perfectly plain beneath.

The female, or hen turkey, is considerably smaller in size, being three feet and a quarter long; the bill and feet resemble those of the male, but are proportionally smaller, the latter being destitute of even a rudiment of spur; the irides are like those of the male; the head and neck are not so naked as in that sex, but are covered by small, decomposed feathers, of a dirty greyish colour; those of the back of the neck are tipped with ferruginous, constituting a longitudinal vitta on that part; the caruncle on the frontlet is rudimental, not susceptible of being elongated; the pectoral appendage is entirely wanting in our specimen; the general plumage is dusky grey, each feather having a metallic band, less brilliant than that of the male; then a blackish band and a greyish terminal fringe; the black subterminal band is obsolete on the feathers of the neck, and of the whole inferior surface; those of the latter part, with the feathers of the lower portion of the back, of the rump, and the flanks, have their tips yellowish ferruginous, becoming gradually brighter towards the tail. The vent and thighs are dirty yellowish grey, without any reflections; the under tail-coverts are tipped, and varied with rather deep ferruginous; the superior tail-coverts are like those of the male, but duller, and tipped with a broad, whitish ferruginous fringe. The wings are also duller, each covert being tipped with greyish; less white exists on the primaries, the bands being narrower, and the secondaries entirely destitute of them. The tail is similar in colour to that of the male. It is proper to remark, that the female which furnished the above description, and is figured in the plate, though certainly adult, had not attained

to its full size and perfect beauty. It was procured in the month of March, on St John's River, Florida.

The young of both sexes resemble each other so closely, before the naked membrane acquires its tinge of red, as to be scarcely distinguishable; the females, however, when a few days old, are somewhat larger than the males, and have a weaker piping note; the males then begin to stand higher on their legs, which are stronger than those of the females, and soon exhibit the rudiments of spurs. On the approach of the first winter, the young males show a rudiment of the beard or fascicle of hairs on the breast, consisting of a mere tubercle, and attempt to strut and gobble; the second year the hairy tuft is about three inches long; in the third the turkey attains its full stature, although it certainly increases in size and beauty for several years longer. In a fine male specimen, evidently young, which I obtained in the Philadelphia market, the plumage is equally brilliant with that of the finest adult, although the frontal caruncle is only one inch in length, the pectoral appendage two inches, and the spur merely rudimental. The concealed portion of the plumage on the anterior part of the back is sprinkled with pale ferruginous, which disappears as the bird advances in age.

Females of four years old have their full size and colouring; they then possess the pectoral fascicle, four or five inches long, (which, according to Mr Audubon, they exhibit a little in the second year, if not barren,) but this fascicle is much thinner than that of the male. The barren hens do not obtain this distinction until a very advanced age; and, being preferable for the table, the hunters single them from the flock, and kill them in preference to the others. The female wild turkey is more frequently furnished with the hairy tuft than the tame one, and this appendage is gained earlier in life. The great number of young hens without it, has no doubt given rise to the incorrect assertion of a few writers, that the female is always destitute of it.

The weight of the hen generally averages about nine pounds avoirdupois. Mr Audubon has shot barren hens, in strawberry

time, weighing thirteen pounds; and he has seen some few so fat as to burst open by falling from a tree, after being shot. The male turkeys differ more in bulk and weight; from the accounts I have received from various parts of the Union, fifteen or twenty pounds may be considered a fair statement of their medium weight; but birds of thirty pounds are not very rare; and I have ascertained the existence of some weighing forty. In relation to those surpassing the last mentioned weight, according to the report of authors who do not speak from personal observation, I have not been able to find any, and am inclined to consider them as fabulous. Mr Audubon informs us, he saw one in the Louisville market that weighed thirty-six pounds; the pectoral appendage of this bird measured more than a foot in length. Bartram describes a specimen of remarkable size and beauty, reared from an egg found in the forest, and hatched by a common hen. When this turkey stood erect, the head was three feet from the ground. The animal was stately and handsome, and did not seem insensible of the admiration he excited. Our plate, which is the first that has been given of the wild turkey, represents both sexes, reduced to one-third of their natural size; the male was selected from among many fine specimens, shot in the month of April, near Engineer Cantonment, on the Missouri. It weighed twenty-two pounds; but as the males are very thin at that season,* when in good order it must have weighed much more.

Though comparatively recent, the domestic state of the turkey has been productive of many varieties; we need not, therefore, be surprised at the existence of numerous and remarkable differences in those animals, which have been domesticated from time immemorial. The most striking aberration from the standard of the species, is certainly the tufted turkey, which is very rare, the crest being white in some specimens,

* The extraordinary leanness of this bird, at particular seasons of the year, has become proverbial in many Indian languages. An *Omahaw*, who wishes to make known his abject poverty, says, "*Wah pawne zezecah ha go ba*,—I am as poor as a turkey in summer."

and black in others. Tame turkeys sometimes occur of an immaculate black colour; others are exclusively white; some are speckled or variegated; and all these varieties are continued by propagation, under analogous circumstances. In the wild state, a white, or even a speckled turkey, is unknown; and we may venture to say, that a plain black one has hardly ever occurred.

Moehring proposed the name of *Cynchramus* for this genus, as the term *Meleagris* was used by the ancients to indicate a different bird. All other naturalists have agreed with Linné, who, though fully aware of the fact, made use of the name we have adopted. But he included in the genus two allied species, which Gmelin very properly rejected, and placed in a separate genus, which he called *Penelope*, considering the turkey as *sui generis*. Latham again rendered the genus unnatural, by restoring one of the objectionable Linnean species, perceiving that it was not properly placed in *Penelope*; it is, in truth, a *Phasianus*. As now characterised, the present genus is exclusively American; and, by the discovery of a beautiful species closely allied to that of the United States, it now consists of two species. The ocellated turkey (*Meleagris ocellata*) inhabits Honduras, and may be distinguished from the common species by its smaller size, more brilliant plumage, and principally by having ocellated spots on the tail. It was first described by Cuvier, and has lately been figured in that magnificent periodical work, the "*Planches Coloriées*" of Temminck and Laugier. A beautiful specimen has long been exhibited in the Charleston Museum.*

* Mr Audubon has recorded the following anecdote of a turkey, which he kept for some years in a tame state:—

"While at Henderson, on the Ohio, I had, among many other wild birds, a fine male turkey, which had been reared from its earliest youth under my care, it having been caught by me when probably not more than two or three days old. It became so tame that it would follow any person who called it, and was the favourite of the little village. Yet it would never roost with the tame turkeys, but regularly betook itself, at night, to the roof of the house, where it remained until dawn. When two years old, it began to fly to the woods, where it remained for a considerable part of the day, to return to the enclosure as night approached. One morning I saw it fly off, at a very early hour, to the woods,

M. Duponceau, so well known by his philological researches, has favoured us with the following table of names for the wild turkey, in the different languages.

E. English Pronunciation.—F. French.—S. Spanish.—G. German.			
Algonkin	Mississay, E.	Mackenzie.	
Adayes	Owachuk, S.	MS. Voc.	
Atacapas	Skillig, S.	MS. Voc.	
Caddoes	Noe, E.	Dr Sibley.	
Chetimachas	Tsante hatineche hase, S.	MS. Voc.	
Cherokee	Kainna; Oocococo, E.	MS. Voc.	
Chickasaws	Fukit, E.	MS. Voc.	
Choctaws	Oopuh, E.	MS. Voc.	
Creeks	Pinewau, E.	MS. Voc.	
Delaware proper	Tschikenum, G.	Heckewelder and Zeisberger.	
Delaware of New Jersey	Tshikuuna, E.	MS. Voc.	
Delaware of New Sweden	Sickenem, (Swedish.)	Luther's Catechism.	
Huron	Ondetontak, F.	Père Sagard.	
Wyandot (same people)	Daigh-ton-tah, E.	Attwater in Archæol. Amer.	
Illinois	Pireouah, F.	MS. Voc.	
Knisteneaux	Mes-sey-thew, E.	Mackenzie.	
Miamis	Pilano, E.	MS. Voc.	
Nenticoke	Pahquun, E.	MS. Voc.	
Nottoway*	Kunum, E.	MS. Voc.	
Omawhaw (a branch of Sioux)	Ze-ze-kah, E.	Say.	
Onondagos (Iroquois)	Netachróchwa gatschinak, G.	Zeisberger's Dictionary, MS.	
Osage } cock	Sukah tingah, E.	MS. Voc.	
	hen	MS. Voc.	
Ottos, or Wahtoktatah (Sioux)	Inchuga Sukah, E.	Say.	
Shawanese	Peléwa, G.	Heckewelder.	
Uchee†	Witch-pshah, E.	MS. Voc.	
Unquachog (Long Island)	Nahiam, E.	MS. Voc.	

and took no particular notice of that circumstance. Several days elapsed, but the bird did not return. I was going towards some lakes near Green River to shoot, when, having walked about five miles, I saw a fine large gobbler cross the path before me, moving leisurely along. Turkeys being then in prime condition for the table, I ordered my dog to chase it, and put it up. The animal went off with great rapidity, and, as it approached the turkey, I saw, with great surprise, that the latter paid little attention. Juno was on the point of seizing it, when she suddenly stopped, and turned her head towards me. I hastened to them, but you may easily conceive my surprise, when I saw my own favourite bird, and discovered that it had recognised the dog, and would not fly from it, although the sight of a strange dog would have caused it to run off at once."

I have more than once known the domestic turkey-cock drive the hen from her nest, sit upon the eggs until hatched, and perform all the duties to the young incumbent on the female, and never during the time allow her to approach. I once knew it take place upon two addled eggs, which a hen had long persevered upon, and was at last succeeded by the male, who kept his place for nearly a fortnight.—ED.

* Indians of Virginia, a branch of the Tuscaroras.

† *Uchees*, a nation of Floridian Indians, speaking a curious language, full of particular sounds, not found in any other languages; they live among the Creeks.

COOPER'S HAWK.—FALCO COOPERII.—PLATE X. FIG. 1.

Philadelphia Museum, No. 403.—My Collection.

ASTUR COOPERII.—BONAPARTE ?*

Falco Cooperii, Bonap. *Synop. App.* p. 433.—The Stanley hawk, Falco Stanleii ?
Aud. pl. 36. m. and f. *Orn. Biog.* i. p. 186.

BUFFON complained of the difficulty of writing a history of birds, because he already knew eight hundred species, and supposed that there might actually exist fifteen hundred, or even, said he, venturing as he thought to the limit of probability, two thousand ! What then would be his embarrassment at present, when nearly six thousand species are known, and fresh discoveries are daily augmenting the number ?

The difficulties attending a general work on this subject are not, perhaps, experienced in an equal degree by one who confines himself to the history of a particular group, or of the species inhabiting a single district. Nevertheless, in a work like the present, which is not a monography limited to one genus or family, but embraces within its scope species belonging to all the different tribes, it is requisite, in order to explain their various relations and analogies, that the author should be more or less acquainted with the whole system of nature. To attempt, without the aid of methodical arrangement, a subject so vast, and apparently unlimited, would be

* We have the authority of the Prince of Musignano for considering the Stanley hawk of Audubon identical with *Astur Cooperii* ; and from a comparison, as far as plates and descriptions will allow, they seem at all events very closely allied. The bird is comparatively rare. Mr Audubon observed them in Louisiana, and about the Falls of Niagara, and describes them as very bold and intrepid, so much so, that one which had seized a cock in a farm yard, was repeatedly forced to the ground before it could master its victim.

We would recommend for perusal the manners of the genus *Astur*, as portrayed in this description. Any one who has witnessed the common species of Europe, will at once perceive the truth of the delineation.—ED.

hopeless. Hence the importance of a correct system of classification; and the construction of one which shall exhibit, as far as practicable, the true affinities of objects, has exercised the attention of the most powerful minds that have been employed in the study of nature.

That division of the feathered class popularly called birds of prey, has always been recognised as a separate and well defined group. In the Linnean System they form the order ACCIPITRES, and were, by that father of the science, distributed into three great natural divisions, which comprise nearly, if not quite, one-fifteenth part of all the known species of birds. The ulterior arrangement of one of these groups, the genus *Falco* of Linné, at present composed of between two and three hundred species, has much divided the opinions of naturalists. From the majestic eagle, the terror of the husbandman, to the feeblest hawk, preying on grasshoppers, it is undeniable that there exists in all these birds a great resemblance in some of the most prominent characteristics, which, being found to predominate in the fish hawk, as well as the kite, and all other species of the falcon tribe, however dissimilar, indicate their separation as a peculiar family from all other birds. But that they are susceptible of division into smaller groups of inferior rank, no practical ornithologist will for a moment deny. Whether these minor groups shall be considered as trivial and secondary, or whether some of them ought not to be admitted as distinct and independent genera, is a question that has been much agitated, and respecting which ornithologists will probably for a long time continue to disagree. Equally great authorities might be cited in favour of either of these opinions, which, like many others of more importance that have divided mankind from the beginning of the world, may perhaps, after all, be considered as merely a dispute about words.

Admitting, however, as seems to be done by all parties, that this great genus may be subdivided with propriety, we look upon it as altogether a secondary question, whether we shall call the minor groups genera, subgenera, or sections; and we

deem it of still less consequence, in a philosophical view, whether the names by which these groups are designated, be taken from a learned or a vernacular language. It is our intention to pursue a middle course. We are convinced of the necessity of employing numerous subdivisions, not only in this, but also in its allied genus *Strix*. These, however, we cannot agree to admit as genera, preferring to call them subgenera, and giving them a name, but when having occasion to mention a species belonging to any of them, to employ the name of the great genus.

The desire of avoiding too great a multiplication of groups, has caused some, even of the first ornithologists of our time, to employ sections that are not natural, and with false or inapplicable characters, and, as if they would compel nature to conform to their preconceived and narrow views, after having assigned decided limits to their groups, to force into them species not only widely different, but that do not even possess the artificial character proposed. We shall not imitate this irrational example. It shall rather be our object to compose natural groups, and, in obedience to this principle, whenever we meet with a group, or even a single species, clearly insulated, it shall at least be pointed out, not so much regarding the number of our subgenera, as the characters that unite the species of which they are respectively composed.

It is objected to the numerous subdivisions that have been proposed in our day, that they pass into and blend insensibly with each other. This is no doubt true; but is it not the same with regard to natural groups of every denomination? It is this fact which has induced us to consider them as subgenera, and not as distinct genera. We are told, however, by the advocates for numerous genera, that, in giving a name, we adopt a genus, but we do not see that this necessarily follows.

There are, we confess, other grounds on which we might be attacked with more advantage. We may, perhaps, be charged with inconsistency in refusing to admit, as the foundation of generic groups in the *Rapaces*, characters which are allowed,

not only by ourselves, but by some of those who are most strenuously opposed to the multiplication of genera, to have quite sufficient importance for such distinction in other families. With what propriety, it might be asked, can we admit *Hydrobates* (*Fuligula*, *Nob.*) as distinct from *Anas*, and the various genera that have been dismembered from *Lanius*, at the same time that we reject, as genera, the different groups of hawks? To this we can only reply, that we are ourselves entirely convinced, that all the subgenera adopted in our synopsis among the *Falcones* of North America, are quite as distinct from each other as *Coccyzus* and *Cuculus*, or *Corvus* and *Garrulus*. The latter genus we have admitted after Temminck, who is opposed to new genera among the hawks, though *Astur* and *Elanus* certainly require to be separated no less than the two genera that Temminck himself has established in the old genus *Vultur*.

No living naturalist (with the exception of those who, through a sort of pseudo-religious feeling, will only admit as genera groups indicated as such by Linné) has adhered longer than ourselves to large genera, at the same time that we could not deny the existence of subordinate natural groups. We will not pretend to deny that these are of equal rank with some recognised as genera in other families, and we can only say, that we consider it doubtful, in the present unsettled state of the science, what this rank ought to be. We therefore, in the instances above quoted, consider it of little importance whether these groups be considered as genera or subgenera.

But what is certainly of great importance, is to preserve uniformity in all such cases; to make co-ordinate divisions, and give corresponding titles to groups of equal value. This uniformity, however desirable, cannot, in the actual state of ornithology, be easily attained; and we have decided, after much hesitation, to continue to employ subgenera. In doing this, we are moreover influenced by the great difficulty that is met with, in some cases, in determining the proper place of a spe-

cies partaking of the characters of several groups, yet not in the least deserving to be isolated ; such as *Falco borealis*, which is almost as much an *Astur* as a *Buteo*, and has been placed by authors, according to their different views, in both these groups.

An extensive reform is evidently needed in the department of classification that relates to genera, and we propose, with this view, to undertake at some future period a general work, when, erecting our system on a more philosophical basis, though we may restrict some, and enlarge other genera, we shall in the instances to which we have alluded, as well as in a multitude of others, at least place them all on an equal footing.

Among the several groups into which the falcon tribe is divided, we come to one composed of about sixty species, well marked, and, if kept within its proper bounds, very natural, to which authors have variously applied the name of *Accipiter*, *Sparvius*, and *Astur*, which last we have adopted.

Found in all parts of the globe, and destroying every where great numbers of birds, and small quadrupeds, the hawks (by which English name we propose to distinguish this group more particularly) closely resemble each other in colour and changes of plumage, especially the North American and European species. They are eminently distinguished from all other falcons by their short wings, not reaching, by a considerable length, to the tip of their tail, which is even, or but very slightly rounded ; and by their first quill feather, or primary, which is very short, while the fourth is constantly the longest. Their bill, suddenly curved from the base, is very strong and sharp ; their head is narrowed before, with the eyes placed high, large, and fiery. Their feet are very long, and the toes especially, the middle one of which is much the longest, and all are armed with very strong sharp talons, well seconding the sanguinary nature of these fierce creatures ; their outer toe is connected at base by a membrane to the middle one. The female is always one-third larger than the male, and the plumage of both is, in most species, dark above, and white beneath ; in the adult, barred with reddish or dusky. In the young bird the colour is

lighter, the feathers skirted with ferruginous, and the white of the under parts streaked longitudinally with dusky, instead of being barred. The tail is uniform in colour with the back, with almost always a few broad bands of black, and sometimes of white, and a whitish tip.

The hawks (*Astures*) combine cunning with agility and strength. Sudden and impetuous in their movements, they make great havoc, especially among birds that keep in flocks, as pigeons, blackbirds, &c., and are the terror of the poultry yard. Fearless and sanguinary, they never feed, even when pressed by hunger, except on red and warm-blooded animals, whose quivering limbs they tear with savage delight. Birds they pluck very carefully, and quarter, before eating them, but swallow small quadrupeds entire, afterwards ejecting their skins rolled up into a ball. They always pursue and seize their prey upon the wing, not falling upon it from aloft, but, rapidly skimming the earth, make their insidious approaches sideways, and, singling out their victim, dart upon it with fatal velocity. They never soar, like the kites and eagles, to the upper regions of the atmosphere; and it is only during the nuptial season that they are observed sailing in wide circles in the air. Their favourite haunts, during summer, are forests, building their nests on trees; in winter they spread over the plains. Though generally observed alone, the male and his companion are seldom far apart. During the youth of their progeny, the parents keep them company, in order to teach them to hunt their prey, and at such times they are observed in families.

This group may be farther subdivided into two sections, to one of which the name of *Astur* has more strictly been assigned, while the other has been distinguished by those of *Sparvius* and *Accipiter*. The former, of which the goshawk of Europe and North America (black-capped hawk of Wilson) is the type, is characterised by its wings being somewhat longer, body more robust, and shorter, and much thicker tarsi. This is the only species that inhabits the United States and Europe.

The second section, to which the present new species belongs, possessing all its characters in a pre-eminent degree, equally with the hawk described by Wilson in its adult state as *Falco Pennsylvanicus*, and in its youth as *Falco velox*, was established on the sparrow-hawk of Europe, *Falco nisus*, but the American species just mentioned are no less typical. The hawks of this section are more elegantly shaped, being much more slender; their wings are still shorter than in the other section, reaching little beyond the origin of the tail, and their tarsi slender and elongated, with a smooth and almost continuous covering.

Notwithstanding their smaller size and diminished strength, their superior courage and audacity, and the quickness of their movements, enable them to turn the flight of the largest birds, and even sometimes, when in captivity together, to overcome them. We have kept a sparrow-hawk, (*Falco nisus*,) which, in the space of twenty-four hours that he was left unobserved, killed three falcons which were confined with him.

The inextricable confusion reigning throughout the works of authors who have not attended to the characters of the different groups of this genus, renders it next to impossible to decide, with any degree of certainty, whether our *Falco Cooperii* has, or has not been recorded. Though agreeing imperfectly with many, we have not been able, notwithstanding our most sedulous endeavours, to identify it with any. It is evidently a young bird, and we should not be surprised at its proving, when adult, a known species, perhaps one of the numerous species figured of late, and possibly *Le Grand Epervier de Cayenne* of Daudin, *Sparvius major*, Vieillot, stated to be one-third larger than the European sparrow-hawk. At all events, however, it is an acquisition to the ornithology of these States; and we have ventured to consider it as a new species, and to impose on it the name of a scientific friend, William Cooper of New York, to whose sound judgment, and liberality in communicating useful advice, the naturalists of this country

will unite with us in bearing testimony, and to whom only the author, on the eve of his departure for Europe, would have been willing to intrust the ultimate revision and superintendence of this work.

The perfect accuracy with which Mr Lawson may be said to have outdone himself in the delineation of this bird, in all the details of its plumage, bill, and feet, will now at least have established the species in the most incontestable manner.

Our bird agrees very well with the falcon gentle, *Falco gentilis*, Linné; but as that species is referred to the young of the goshawk, we have preferred giving it a new name, to reviving one that might have created an erroneous supposition of identity. To the young goshawk, our hawk is, in fact, extremely similar in colour and markings, being chiefly distinguished from it by the characters of their respective sections, having the tarsi much more slender and elongated, and the wings still shorter; the tail is also considerably more rounded.

But it is to the sharp-shinned hawk (*Falco velox*) of Wilson, the *Falco Pennsylvanicus*, or *Falco fuscus* in its immature plumage, that our Cooper's hawk bears the most striking resemblance, and is in every particular most closely allied. Even comparing feather by feather, and spot by spot, they almost perfectly agree; but the much larger size of the present, it being more than twice the bulk, will always prevent their being confounded, even by the most superficial observer. Another good mark of discrimination may be found in the comparative length of the primaries; the second in *F. Cooperii* being subequal to the sixth, while in *F. velox* it is much shorter. The latter has also the fifth as long as the fourth; that, in our species, being equal to the third. The tail is also much more rounded, the outer feather being nearly an inch shorter than the middle one. In *F. velox* the tail is even, the outer feather being as long, or, if any thing, longer than the middle. There is no other North American species for which it can be mistaken.

The bird represented in the plate, of which we have seen seven or eight specimens, perfectly similar in size and plumage, was a male, killed in the latter part of September, near Bordentown, New Jersey. The stomach contained the remains of a sparrow. Another that we procured, was shot on the 12th of December, while in the act of devouring on the ground a full-grown ruffed grouse which he had killed, though a larger and heavier bird than himself. Mr Cooper, the friend to whom we have dedicated this species, has recently favoured us with an accurate description of a specimen of a somewhat larger size, shot in the early part of November, on the eastern part of Long Island.

The male Cooper's hawk is eighteen inches in length, and nearly thirty in extent. The bill is black, or rather blackish brown; the cere, greenish yellow; the angles of the mouth, yellow. The irides are bright yellow. The general colour above is chocolate brown, the feathers being whitish grey at base; on the head, and neck above, they are blackish, margined with rufous, pure white towards the base, and greyish at the bottom, the white colour showing itself on the top and sides of the neck, and being much purer on the nucha. The back and rump are the same, but the feathers larger, and lighter coloured, less margined with rufous, more widely greyish at base, and bearing each four regular spots of white in the middle of their length, which are not seen unless when the feathers are turned aside. The whole body beneath is white, each feather, including the lower wing-coverts and femorals, marked with a long, dusky medial stripe, broader and oblanceolate on the breast and flanks, (some of the feathers of which have also a blackish band across the middle,) the throat, and under wing-coverts; the long feathers of the flanks (or long axillary feathers) are white, banded with blackish; the vent and lower tail-coverts, pure white; the wings are nine inches long, and, when folded, hardly reach to the second bar of the tail from the base; the smaller wing-coverts and scapulars, are like the back, the quills brown above, (lighter on the shaft,) and silvery grey beneath,

regularly crossed by blackish bands, less conspicuous above ; the space between the bands is white on the inner vanes at base ; some of the secondaries and tertials are tipped and edged with rusty, and have more and more of white as they approach the body, so that those nearest may in fact be described as white banded with blackish. The first primary is very short, more so than the secondaries ; the second is equal to the sixth, the third to the fifth, these two last mentioned being hardly shorter than the fourth, which, as in all *Astures*, is longest. The tail is full eight inches long, reaching five beyond the wings ; its colour is ashy brown, much paler beneath, tipped with whitish, and crossed by four equidistant blackish bands, nearly one inch in breadth ; the tail-coverts at their very base are whitish ; the lateral feathers are lighter, and with some white on the inner webs. The legs and feet are yellow, slender, and elongated, but still do not reach, when extended, to the tip of the tail ; the tarsus, feathered in front for a short space, is two and three quarter inches long ; as in other *Astures*, the middle toe is much the longest, and the inner, without the nail, is shorter than the outer, but taken with its much longer nail, is longer. The talons are black, and extremely sharp, the inner and the hind ones subequal, and much the largest, while the outer is the most delicate.

The female is larger, and measures two inches more in length, but in plumage is perfectly similar to the male. As the male we have described and figured is evidently a young bird, it is very probable that the adult, after undergoing the changes usual in this group, obtains a much darker and more uniform plumage above, and is beneath lineated transversely with reddish. That in this supposed plumage, the bird has not yet been found, is no reason to doubt its existence, as the species is comparatively rare. Even of the common *Falco fuscus*, though constantly receiving numerous specimens of the young, we have only been able to procure a single one in adult plumage during a period of four years.

We regret that this is all that is in our power to offer of the

history of this species, which, as will be seen from the description, possesses in an eminent degree the characters of the group. From the circumstance of its being found here in autumn and winter, we are led to infer that it comes to us from the north.

PALM WARBLER.—SYLVIA PALMARUM.—PLATE X. FIG. 2.

Motacilla palmarum, *Gmel. Syst.* i. p. 951, sp. 53, winter dress.—*Sylvia palmarum*, *Lath. Ind.* p. 544, sp. 136. *Vieill. Ois. Am. Sept.* ii. p. 21, pl. 73, (and the other works of the same author,) winter plumage. *Nob. Add. Orn. U. S.* in *Jour. Ac. Ph.* v. p. 29. *Id. Cat. Birds U. S.* in *Contr. Macl. Lyc. Ph.* i. p. 16, sp. 105. *Id. Syn. Birds U. S.* sp. 105, in *Ann. Lyceum, N. Y.* ii. p. 78. —*Motacilla ruficapilla*, *Gmel. Syst.* i. p. 971, sp. 106, summer dress.—*Sylvia ruficapilla*, *Lath. Ind.* summer dress, (not of *Vieill.*)—*Ficedula Martinicana*, *Briss. Av.* iii. p. 490, sp. 50, pl. 22, fig. 4, perfect plumage.—*Le Bimbelé, ou fausse Linotte*, *Buff. Ois.* v. p. 330, winter dress.—*Figuier à tete rousse*, *Buff. Ois.* v. p. 306, summer dress.—Palm warbler, *Lath. Syn.* iv. p. 489, sp. 131, winter dress.—Bloody-side warbler, *Lath. Syn.* iv. p. 489, sp. 115, (not of *Penn.*) summer plumage.—*Philadelphia Museum*.

SYLVICOLA PALMARUM.—JARDINE.

Sylvia palmarum, *Bonap. Synop.* p. 78.

THIS is one of those lively, transient visitants, which, coming in spring from warmer regions, pass through the middle states, on their way to still colder and more northern countries, to breed. From the scarcity of the species, its passage has hitherto been unobserved; and it is now, for the first time, introduced as a bird of the United States. Authors who have heretofore made mention of it, represent it as a permanent resident of St Domingo, and other islands of the West Indies, and even describe its nest and habits, as observed there.

In the United States, it is found during winter in Florida, where it is, at that season, one of the most common birds. In the month of November, they are very abundant in the neighbourhood of St Augustine, in East Florida, even in the town, and in other parts of the territory wherever the orange tree is cultivated, being rare elsewhere. They are found in great

numbers in the orange groves near Charleston, South Carolina, at the same season, and have also been observed at Key West, and the Tortugas, in the middle of February, and at Key Vacas in the middle of March. Their manners are sprightly, and a jerking of the tail, like the pewee, characterises them at first sight from a distance. The only note we have heard them utter, is a simple chirp, very much like that of the black and yellow warbler, *Sylvia maculosa*, (*Magnolia* of Wils.) They are fond of keeping among the thick foliage of the orange trees. A few are observed every year in spring, on the borders of the Schuylkill, near Philadelphia, as well as in the central parts of New Jersey, on their passage to the North. They breed in Maine, and other parts of New England, where they are common during summer, and perhaps also in Canada, though probably not extending to the inhospitable climates of Hudson's Bay, whose natural productions are so well known.

The bird represented in the plate was shot near Borden-town, on the 17th of April, in the morning. It was a fine adult male, in the gayer plumage of the breeding season, in which it is now for the first time figured, and a description is subjoined.

Length five inches and a quarter; extent more than eight inches; bill, five-eighths of an inch long, very slender, straight, hardly notched, blackish, paler beneath; feet, dusky grey, yellowish inside; irides, dark brown, nearly black; crown, bright chestnut bay; bottom of the plumage lead colour all over, much darker beneath; a well-defined superciliar line, and the rudiment of another, on the medial base of the upper mandible, rich yellow: the same colour also encircles the eye; streak through the eyes and cheeks dusky olive, somewhat intermixed with dull chestnut; upper parts olive green, each feather being dusky in the middle; rump and upper tail-coverts yellow olive; all beneath bright yellow; sides of the neck, breast, and flanks, with chestnut streaks; superior wing-coverts blackish, margined and tipped with olive green, and somewhat tinged with chestnut; inferior wing-coverts yellowish; quills dusky, edged ex-

teriorly with green, the outer one with white on the outer side, two exterior with a large white spot on the inner web at tip.

In the plumage here described, it has been mentioned by several authors, under the name of *Sylvia ruficapilla*, and by Latham is called the bloody-side warbler. In that which we are about to describe, it was first made known by Buffon, who adopted the name of *Bimbelé*, given to it in the West Indies, and in this state it is figured by Vieillot, as the *Sylvia palmarum*. The following description is drawn up from a specimen procured in Florida, in winter.

Length five inches; bill half an inch, slender, almost straight, and very slightly notched, blackish, paler beneath; the feet are blackish; irides, very dark brown. The general plumage above, is olive brown, each feather being dusky along the middle: the feathers of the head are dusky at base, as is the whole plumage; then they are chestnut nearly to the tip, (forming a concealed spot of that colour on the crown,) where they are of the common colour, but somewhat darker; the rump and superior tail-coverts are yellow olive; a well defined yellowish white line passes over the eye, which is encircled with white; the cheeks are dusky, as well as a streak through the eye; the inferior parts are whitish, slightly tinged with yellowish, and with a few blackish streaks on each side of the throat, and on the breast and flanks; the belly is immaculate, and more richly tinged with yellow, the inferior tail-coverts being pure yellow; the wing-coverts are of the colour of the feathers of the back, the blackish centre being more extended and deeper; the wings have no bands; the quill feathers are blackish, edged externally with pale yellow olive, becoming whitish towards the tip; the five outer ones are subequal; the tail is even, its feathers are somewhat pointed, edged externally with yellow olive, internally with whitish, the outer one also externally whitish; the two outer ones with a large pure white spot on their inner vane at tip; the third and fourth, each side, with an inner white terminal margin.

In this plumage, this bird resembles so nearly *Sylvia coro-*

nata in its most humble dress, that it is distinguishable only on a close examination. However, the bill is longer, and more slender, the crown spot chestnut instead of yellow, the feathers being destitute of the white which is observable in the other, by separating the feathers; the rump is olive yellow, not pure yellow, and that colour extending on the tail-coverts, which it does not in *Sylvia coronata*. The under parts tinged with yellow, and especially the pure yellow tail-coverts, which are pure white in *S. coronata*, will sufficiently distinguish them.

It is a remarkable circumstance, that there is no obvious difference to be observed between the plumage of the sexes, notwithstanding the statements of authors to the contrary. This is the case, however, in *S. coronata*, and in almost all the warblers that change periodically from a dull to a bright plumage; and, in fact, in most birds in which this change takes place.

According to Buffon and Vieillot, this bird is a permanent resident in the West Indies, where, as they state, the name is sometimes applied to it of *Fausse Linotte*. We, however, can perceive scarcely any resemblance, except in its dull state of plumage, to a similar state of the red-poll finch. The name of *Bimbelé*, by which it is known among the negroes of those countries, is derived from the recollection of an African bird, to which, probably, the resemblance is not more evident. Unfortunately, this propensity of limited minds to refer new objects, however distinct, to those with which they are acquainted, seems to have prevailed throughout the world, and is found exemplified nowhere more absurdly than in the Anglo-American names of plants and animals.

The food of this little warbler consists chiefly of fruits and small seeds. Its song is limited to five or six notes; but though neither brilliant nor varied, it is highly agreeable, the tones being full, soft, and mellow. While other birds of its kind build in thickets and humble situations, this proud little creature is said always to select the very lofty tree from which it takes its name, the palmist, (a species of palm,) and to place its

nest in the top, in the sort of hive formed at the base or insertion of the peduncle which sustains the clusters of fruit.

Such are the facts we have gathered from authors ; but as the singular description of the nest coincides exactly with the manner of building of the *Tanagra dominica*, and as, moreover, the palm warbler appears not to be known in its gayer vesture in the West Indies, we cannot easily believe that it breeds elsewhere than where we have stated ; that is, in the temperate, and even colder regions of America, and that what has been mistaken for its nest, in reality belongs to the above named, or some other bird.

The first accounts of this species were given, as we have already stated, by Buffon, and from him subsequent writers appear to have copied what they relate of it. The bird which he described must have been a very young specimen, as its colours are very dull, much more so than the one figured and described by Vieillot, who supposes, though erroneously, Buffon's specimen to have been a female. Even Vieillot's, which is certainly our species in its winter dress, is much duller in colour than those we received from Florida ; and these again are far less brilliant than the bird in our plate represented, as it appears for a few days in the spring in Pennsylvania and New Jersey, and is found throughout summer in Maine ; thus exhibiting the several gradations of change which the plumage undergoes.

Naturalists cannot be too circumspect in receiving reports even from the most respectable sources, their own senses affording the only authentic testimony to be relied on. From information derived from Mr T. Peale, who had no opportunity for making comparisons, we erroneously stated in the first volume of this work, that *Sylvia celata*, Say, was one of the most common birds in Florida during winter, keeping among the orange trees, &c. All this statement had reference to the present species ; and as soon as the specimens brought by Mr Peale as *Sylvia celata*, were shown to us, the error was immediately perceived. We therefore hasten to correct this mis-

take, which would be otherwise of more consequence, inasmuch as no one else could, for a long time, detect it. This species resembles, it is true, *S. celata*, (whose range must remain limited to the Rocky Mountains,) and perhaps still more *S. rubricapilla*, Wilson, but it is not of the same subgenus, *Dacnis*, and it may readily be known by the white spots of the tail feathers.

When the genus *Sylvia*, containing upwards of two hundred and fifty species, shall have been properly studied, it will be found practicable to divide it into several more sections, subgenera, and even perhaps genera. This bird, along with many other North American species, will constitute a highly natural group, very distinct from the true *Sylvia*, of which *S. atricapilla* may be considered as the type. We presume that it is the group we have in view, to which Mr Swainson has given the name of *Sylvicola*, in his Synopsis of Mexican birds. Our species is erroneously placed by Buffon among his *Demi-fins*, corresponding to our *Dacnis*, and Wilson's *Worm-eaters*.

WHITE-TAILED HAWK.—FALCO DISPAR.—PLATE XI. FIG. I.

Falco dispar, Temm. et Laug. *Pl. Col.* 319, young female. *Nob. App. to Synopsis of N. A. Birds in Ann. Lyc. New York*, p. 435.—*Milvus* (now *Elanoides*) *leucurus*, Vieill. (*Alcon blanco*, d'Azara) *Nouv. Dict. d'Hist. Nat.* xx, p. 556.—*Falco melanopterus*, *Nob. Jour. Ac. Ph.* v. p. 28. *Id. Cat. Birds U. S.* sp. 16. in *Contr. Maccl. Lyc.* i. p. 11. *Id. Synopsis of N. A. Birds*, sp. 16, in *Con. Lyc. N. Y.*—*Le Faucon blanc*, *Sonnini's d'Azara*, iii. p. 96, sp. 36.—*My Collection*.

ELANUS DISPAR.—JARDINE.

Falco dispar, Bonap. *Synop. App.* p. 435.

THIS beautiful hawk, which we recently discovered to be an inhabitant of North America, is so strikingly similar to the black-winged hawk (*Falco melanopterus**) of the Old Conti-

* *Falco melanopterus*, Daud. *Orn.* ii. p. 152, sp. 121. *Lath. Ind. Suppl.* p. 6. sp. 16.

nent, that we have hitherto considered them as identical, contrary to the opinion of Vieillot, whose authority, it is true, could in this case be of little weight, as he had not seen the species, but, like many others, had merely given it a name; his sole knowledge of it being derived from the work of D'Azara. We have now yielded only to the decision of Temminck, (who has lately introduced the young into his *Planches Coloriées*,) but not without much reluctance, especially as that distinguished ornithologist has evidently not been at the trouble of comparing the two species; otherwise, he would certainly not have omitted noticing their affinities and differential characters; since in the history of species so closely allied as these two, the differential characters are of more importance and utility than the most laboured descriptions.

This comparison we have carefully instituted between our American specimens, and others from Africa and Java. They agreed perfectly, especially with that from Java, in every, the minutest character, even feather by feather, much better than birds of prey of the same species, and from the same country, do generally. They are even more alike than different specimens from the Old Continent of the black-winged itself, since that species is said to vary considerably in the black markings, which extend more or less on the wings in different individuals. Nevertheless, a constant, though trivial, differential character, added to the difference of locality, has induced

Falco Sonninensis, Lath. *Ind. Suppl.* p. 12, sp. 38.

Elanus cæsius, Savigny, *Ois. d'Égypt.* p. 98, pl. 2, f. 2. Vieill. *Nouv. Dict. d'Hist. Nat.* viii. p. 240, (now *Elanoides*.)

Elanus melanopterus, Leach, *Zool. Misc.* iii. p. 4. pl. 122. Vigors, *Descr. Austral. Birds*, in Tr. Lin. Soc. xv. p. 185.

Le Blac, Le Vaillant, *Ois. d'Afr.* i. p. 147, pl. 36, male, 37, young male.

Black-winged falcon, Lath. *Syn. Suppl.* ii. p. 28. sp. 23.

Sonnini's falcon, Lath. *Syn. Suppl.* ii. p. 52. sp. 59.

The inspection of original drawings, in a collection that Mr Gray, of the British Museum, was kind enough to show me lately in London, has enabled me to add to these already numerous synonyms, *Falco axillaris*, Lath. *Ind. Suppl.* (*Circus axillaris*, Vieill. !) from New Holland.

us to follow Temminck's course, in which we should never have ventured to take the lead. This character consists in the tail being, in *Falco dispar*, constantly irregular, while in *F. melanopterus*, it is even; or, to explain it more clearly, the outer tail-feather is rather the longest in the African, and more than half an inch shorter than the next in the American species. This essential character is much more conspicuous in Temminck's plate than in ours, owing to the tail being spread. In the black-winged, also, the lower wing-coverts are destitute of the black patch so conspicuous in the American bird; a female from Java has, however, a slight indication of it, but no trace of it is observable in our African males.

By admitting this to be a distinct species from the black-winged hawk, we reject one more of those supposed instances, always rare, and daily diminishing upon more critical observation, of a common habitation of the same bird in the warm parts of both continents, without an extensive range also to the north. A steady and long protracted exertion of its powerful wings, would have been requisite to enable it to pass the vast and trackless sea which lies between the western coast of Africa, the native country of the black-winged hawk, and the eastern shores of South America. Yet were the species identical, this adventurous journey must have been performed. For, even admitting several centres of creation, we cannot believe that nature,* who, notwithstanding her luxuriant abundance, evidently accomplishes all her ends with the greatest economy of means, has ever placed, aboriginally, in different parts of the globe, individuals of the same species; but has always given to each the power of extending its range according to volition, in any direction where it should find climate, food, or other circumstances most appropriate.

The white-tailed hawk is one of those anomalous species, which connect the generally received divisions of the great

* The word *nature* being taken in so many different acceptations, we think proper to state, that with Ranzani, we mean by it "the aggregate of all created beings, and of the laws imposed on them by the Supreme Creator."

genus *Falco*. It participates in the form and habits of the kites (*Milvus*), while in its other relations it approaches the true falcons (*Falco*), and at the same time presents traits peculiar to itself. Savigny has, therefore, very properly considered its near relative, the black-winged, as the type of a peculiar group, which he elevates to the rank of a genus, but which we for the present shall adopt as a subgenus only. Subsequent observations have confirmed Le Vaillant's opinion, that the swallow-tailed hawk (*Falco furcatus*) is closely related to it; and associated with a few other recently discovered species, they have been considered as a distinct group, under Savigny's name of *Elanus*. Vieillot adopted the group as a genus, but, for what reason we know not, has since changed the name to *Elanoides*. The hawks of this group are readily distinguished from all others, by the superior length of the second primary of their elongated wings; by their bill, rounded above, curved from the base, and not toothed; their hirsute cere; thick, short, and wholly reticulated tarsi, half feathered before; toes entirely separated, and powerful nails. The head is flattened above, the gape wide, and the eyes large, deep sunk, and with the orbits greatly projecting above. The colours are also similar in the different species, being white, or pale, (bluish white, &c.) with more or less of black. The comparatively even tail of the two allied species of which we are treating, eminently distinguishes them from the others of the subgenus, which have the tail exceedingly forked. They are remarkable also for another characteristic, that of having the nails rounded beneath, and not canaliculate, a circumstance that occurs besides only in the subgenus *Pandion*.* This character, which we formerly attributed to all the *Elani*, and which we believe we first observed not to exist in the fork-tailed species, has induced Mr Vigors, the English ornithologist, to separate the latter as a new genus, under the name of *Nauclerus*.

* In *Pandion*, however, it is the middle nail that is rounded; in this species, it is the lateral and posterior only.

The female white-tailed hawk, is sixteen and a half inches long, and three feet five and a half inches in extent. The bill is black, and measures from the corners of the mouth one inch and a half, the sides of the mouth, posterior portion of the lower mandible, and cere, bright yellow orange; bristles on the cere white, as well as those first on the lores; those nearest the eye, black; irides, brownish red; eyelids, white; cilia, long and black; orbits, black, wider before the eye; front line over the orbits, sides of the head, neck, and body, and whole inferior surface of the bird, together with the thighs, pure white; head, pearl grey, becoming gradually darker from the pure white front towards the neck and back, which are entirely bluish ash, as well as the rump, scapulars, secondaries, and greater wing-coverts; smaller and middle wing-coverts, deep glossy black; spurious wing, blackish; lining of the wing, and inferior coverts, pure white, the latter with a wide black patch; primaries on both surfaces, slate colour, the shafts, black, and, the first excepted, margined exteriorly, and slightly at tip, with dusky, and interiorly, with whitish; the margin of the inner web is of a remarkably close texture, with a very soft surface; the first primary is a little shorter than the third; the second longest; the two outer ones are slightly serrated on their outer web. When closed, the wings reach within less than an inch of the tip of the tail. The tail is seven inches long, slightly emarginated, and with the outer feather more than half an inch shorter than the adjoining one; the middle feathers are very pale bluish slate, all the others pure white; shafts above, black towards the tip, and beneath, white; that of the exterior tail-feather, white, tipped with dusky above towards the base; feet, bright yellow orange; tarsus, one inch and a half long, feathered in front half its length, the remainder covered with small reticulated scales; toes separated to the base; nails, large, black, very acute, and, with the exception of the middle one, perfectly rounded beneath; the middle one is very sharp on the inner side.

The male is of a smaller size; the upper surface, instead of

being bluish slate, is more of a dirty greyish, slightly tinged with ferruginous; the tail is less purely white. These sexual differences are the more worthy of note, as they are the reverse of what is exhibited in other hawks. It is, however, possible that they are not to be found in very old males.

The young of both sexes, but especially the young males, are somewhat darker, and are strongly tinged with ferruginous, principally on the head, neck, and wings; the breast being entirely of that colour. A specimen of the African species in this state is figured by Le Vaillant, whose plates in general are tolerably accurate; but how great is the disappointment of the ornithologist to find the tarsi represented as covered distinctly with plates, as in other hawks! We cannot let pass this opportunity of exhorting engravers, draftsmen, and all artists employed on works of natural history, never to depend on what they are accustomed to see, but in all cases to copy faithfully what they have under their eyes; otherwise, taking for granted what they ought not, they will inevitably fall into these gross errors. Even the accurate Wilson himself, or rather perhaps his engraver, has committed the same error in representing the feet of the swallow-tailed hawk. Of what consequence, will it perhaps be said, is the form of the scales covering the foot of a hawk? But these afford precisely one of the best representative characters of groups, and it will, therefore, not be thought unnecessary to caution artists in this, and similar cases.

The young, as described by Temminck, is in a more advanced stage of plumage; the front, forepart of the neck, thighs, flanks, and under tail-coverts, are of pure white; the breast and belly are of the same colour, but are marked with reddish spots, and brown lines; the occiput, nucha, back, and scapulars, are brownish, mixed with whitish, and more or less tinged with cinereous; all these feathers having wide margins of whitish and reddish; the upper tail-coverts are black, with reddish margins; the inferior, marbled with black and white; the quills are bluish, terminated with white; the tail is of a

greyish white, with black shafts; all the feathers have dark cinereous towards the point, and are tipped with white.

This species is an inhabitant of a great portion of the American continent, as the *Alcon blanco* of Paraguay, so well described by D'Azara, is undoubtedly the same bird. Vieillot undertook to classify it from D'Azara's description, applying to it the name of *Milvus leucurus*; but, after more attentive consideration, he perceived that it was not a *Milvus*, but an *Elanus*. He consequently removed it to that genus, which he called *Elanoides*, at the same time asserting, that with the swallow-tailed hawk, it ought to constitute a different section from the black-winged hawk; from which, upon actual comparison, it is with difficulty shown to be even specifically distinct! Such are the absurdities into which authors are betrayed, through the highly reprehensible practice to which some are addicted, of attempting to classify and name animals they have never seen, from the descriptions, or mere indications, of travellers. Though, by such means, they may sometimes gain the credit of introducing a new species, and thus deprive future observers, who may risk their fortunes, or even their lives, in pursuit of imperfectly known animals, of their best reward, they cannot fail to incur the merited reprobation of all honourable and fair-dealing naturalists.

Though this bird ranges so widely over the American continent, it is every where a rare species, and in the United States appears to be confined to the southern extremity. The specimen figured in the plate, of the natural size, was shot in December, in the neighbourhood of St Augustine, East Florida, at the residence of my near relation, Colonel Achilles Murat, whose kind hospitality afforded to Mr Titian Peale every facility for the prosecution of his scientific researches. It was observed by Mr Peale, about the dawn of day, sitting on the dead branch of an old live oak, attentively watching the borders of an adjacent salt marsh, which abounded with *Arvicola hispidus*, and the different species of sparrow, which make their residence in the southern parts of the Union. It was very shy, and, on

his approach, it flew in easy circles at a moderate elevation; and such was its vigilance, that the greater part of a day was spent in attempting to get within gunshot. At length, the cover of interposing bushes enabled him to effect his purpose. It was a beautiful female, in perfect adult plumage. This sex, in the perfect state, is now for the first time represented, Temminck's plate representing the young female only; and even the figures of the African analogue, in Le Vaillant's works, exhibit only the male in the young and adult states. As usual in the tribe of predaceous birds, the female is much larger than the male, and is therefore entitled to precedence.

Though this species is so rare, its near relative, the black-winged hawk, appears, on the contrary, to be very numerous. In Africa, where it was first discovered, and which is probably its native country, it is rather a common species, and has a very extensive range. Le Vaillant frequently observed it on the eastern coast of that little known continent, from Duyven-Hoek to Caffraria, where, however, it is less common. The same traveller found it to inhabit also in the interior, in the Cambdebo, and on the shores of the Swart-kop, and Sunday Rivers. It is very common in Congo, and numerous also in Barbary, Egypt, and far-distant Syria. The researches of Ruppel, in the interior of North-Eastern Africa, already so productive, and from which so much more may be expected, have furnished specimens of this species, of which we owe two to the kindness of Dr Creitzschmaer, the learned and zealous director of the Museum of the free city of Frankfort—an institution which has risen up with such wonderful rapidity. We are also informed, that it is an inhabitant of India, which is rendered probable by a specimen from Java, in my collection. It is found in New Holland, being numerous in the autumn of New South Wales, where it is migratory, and preys chiefly on field mice, but is seldom known to attack birds. It is there observed at times to hover in the air, as if stationary and motionless. Though occasionally met with on the African coast of the Mediterranean, not a solitary individual has ever been

known to visit the opposite shores of Italy, Spain, or Turkey, nor has it been met with in any other part of Europe.

When at rest, it is generally seen perched on high bushes, where the pure white of the lower parts of its body renders it very conspicuous at a distance. It utters a sharp piercing cry, which is often repeated, especially when on the wing, though Mr Peale assures us that our individual uttered no cry. Like its closely related species, it does not attack small birds, except for the purpose of driving them from its favourite food, which consists of hemipterous insects, chiefly of the *Gryllus* and *Man-tis* genera, as well as other insects, and some reptiles. In the stomach of our specimen, however, Mr Peale found, besides the usual food, fragments of an *Arvicola hispidus*, and one or two feathers, apparently of a sparrow : but it is not a cowardly bird, as might be suspected from its affinity to the kites, and from its insignificant prey, since it successfully attacks crows, shrikes, and even the more timid birds of its own genus, compelling them to quit its favourite haunts, which it guards with a vigilant eye. They build in the bifurcation of trees. The nest is broad and shallow, lined internally with moss and feathers. The female is stated to lay four or five eggs ; the nestlings at first are covered with down, of a reddish-grey colour.

The African species is said to diffuse a musky odour, which is retained even after the skin is prepared for the museum ; but we are inclined to believe, that it is in the latter state only that it possesses this quality. Mr Peale did not observe any such odour in the bird he shot, but being obliged, for want of better food, to make his dinner of it in the woods, found it not unpalatable.

FEMALE CÆRULEAN WARBLER.—SYLVIA AZUREA.

PLATE XI. FIG. 2.

Wilson's American Ornithology, Cœrulean Warbler, *Sylvia cœrulea*, vol. ii. 141, pl. 17, fig. 5, for the male.—*Sylvia azurea*, *Stephens, Cont. Shaw's Zool.* x. p. 653. *Nob. Obs. Jour. Ac. Nat. Sc. Ph.* iv. p. 193, male.—*Sylvia bifasciata*, *Say*, in *Long's Expedition to the Rocky Mountains*, i. p. 170, male. *Philadelphia Museum*, No. 7309, male ; 7310, female.

SYLVICOLA CÆRULEA.—SWAINSON.

Male, vol. i. p. 283.

THE merit of having discovered this bird is entirely due to the Peale family, whose exertions have contributed so largely to extend the limits of natural history. The male, which he has accurately described and figured, was made known to Wilson by the late venerable Charles Wilson Peale, who alone, and unaided, accomplished an enterprise, in the formation of the Philadelphia Museum, that could hardly have been exceeded under the fostering hand of the most powerful government. To the no less zealous researches of Mr Titian Peale, the discovery of the female is recently owing, who, moreover, evinced his sagacity by determining its affinities, and pointing out its true place in the system. Although it preserves the principal characters of the male, yet the difference is sufficiently marked to deserve an especial notice in this work.

The specimen here represented, was procured on the banks of the Schuylkill, near Mantua village, on the 1st of August, 1825. It was very active, skipping about on the branches of an oak, attentively searching the leaves, and crevices of the bark, and at intervals taking its food on the wing, in the manner of the flycatchers. It warbled in an under tone, not very unlike that of the blue-grey flycatcher of Wilson, (*Sylvia cœrulea*, L.) a circumstance that would lead to the supposition of its being a male in summer dress ; but on dissection it proved to be a female.

The female azure warbler is four and three-quarter inches long, and eight and a quarter in extent.* Bill, blackish above, pale bluish beneath; feet, light blue; irides, very dark brown; head and neck above, and back, rich silky green, brighter on the head, and passing gradually into dull bluish on the rump; line from the bill over the eye, whitish, above which is the indication of a blue-black line widening behind; a dusky streak passes through the eye; cheeks, dusky greenish; beneath, entirely whitish, strongly tinged with yellow on the chin; sides of the neck, breast, flanks, and vent, streaked with dark bluish; the base of the whole plumage is bluish white; inferior tail-coverts, pure white; wings and tail, very similar to those of the male, though much less brilliant; smaller wing-coverts, bluish, tipped with green; middling and large wing-coverts, blackish, widely tipped with white, constituting two very apparent bands across the wings, the white slightly tinged with yellowish at tip; spurious wing, blackish; quill-feathers, blackish, edged externally with green, internally and at tip with whitish, the three nearest the body more widely so; the inferior wing-coverts, white; tail, hardly rounded, feathers, dusky slate, slightly tinged with bluish externally, and lined with pure white internally, each with a white spot towards the tip on the inner web. This spot is larger on the outer feathers, and decreases gradually until it becomes inconspicuous on the two middle ones.

The description of the male need not here be repeated, having been already given with sufficient accuracy by Wilson, to whose work the reader is referred. On a comparison of the description and figures, he will find that the chief difference between the sexes consists in the female being green instead of blue, in her wanting the black streaks, and in being tinged with yellow beneath.

We have to regret our inability to add much to Wilson's

* The dimensions given by Wilson of the male must be rather below the standard, as they are inferior to those of the female; whereas all the specimens we examined were larger, as usual.

short and imperfect account of the species. It is by no means more common at this time, than it was when he wrote; which may account for the difficulty of ascertaining the period of its migrations, and for the circumstance of our having never met with the nest, and our want of acquaintance with its habits. We can only add to its history, that it is found in the trans-Mississippian territory; for the *Sylvia bifasciata* of Say, accurately described in Long's first expedition, is no other than the male. We have examined the specimen shot at Engineer Cantonment.

Although the undisputed merit of first making known this species belongs to Wilson, yet the scientific name that he applied to it cannot be retained, inasmuch as it is pre-occupied by the blue-grey warbler, a Linnean species, which Wilson placed in *Muscicapa*, but which we consider a *Sylvia*, notwithstanding that it does in some degree aberrate from the typical species of that genus.* Under such circumstances, we cannot hesitate in adopting the name substituted by Mr Stephens, the continuator of Shaw's compilation.

* See my *Observations on the Nomenclature of Wilson's Ornithology*.

BLUE HAWK, OR HEN-HARRIER.—FALCO CYANEUS.

PLATE XII.

Wilson's American Ornithology, vol. vi. p. 67, pl. 51, fig. 1, for the young, (under the name of Marsh Hawk, *Falco uliginosus*.)—*Falco cyaneus*, *Linn. Syst. i.* p. 126, sp. 10. *Gmel. Syst. i.* p. 276, sp. 10. *Iter Poseg.* p. 27, adolescent male. *Lath. Ind. Orn. i.* p. 39, sp. 94. *Montague, in Trans. Lin. Soc. ix.* p. 182. *Meyer, Taschen. Deutschl. Vog. i.* p. 145. *Temm. Man. Orn. i.* p. 72. *Ranz. El. Zool. iii.* pl. 7, p. 137, sp. 28. *Brehm. Lehrb. Eur. Vog. i.* p. 59. *Selby, Ill. Br. Orn. i.* p. 26, pl. 10, fig. 1, male; fig. 2, female. *Savi. Orn. Tosc. i.* p. 63. *Nob. Cat. and Syn. Birds U. S.* sp. 22.—*Falco pygargus*, *Linn. Syst. i.* p. 126, sp. 11. *Gmel. Syst. i.* p. 277, sp. 11, female and young.—*Falco Hudsonius*, *Linn. Syst. i.* p. 128, sp. 19. *Gmel. Syst. i.* p. 277, sp. 19, young, American.—*Falco Bohemicus*, *Gmel. Syst. i.* p. 276, sp. 107. *Lath. Ind. p.* 38, sp. 93, adult male.—*Falco albicans*, *Gmel. Syst. i.* p. 276, sp. 102. *Lath. Ind. p.* 38, sp. 93, adult male.—*Falco griseus*, *Gmel. Syst. i.* p. 275, sp. 100. *Lath. Ind. p.* 37, sp. 86. *Gerard. Tabl. Elem. p.* 37, adolescent male.—*Falco montanus*, var. B. *Gmel. Syst. i.* p. 278, sp. 106. *Lath. Ind. p.* 48, sp. 116.—*Falco cinereus*, *It. Poseg.* p. 27, adolescent male.—*Falco albicollis*, *Lath. Ind. p.* 36, sp. 81, adult South American male.—*Falco Buffonii*, *Gmel. Syst. i.* p. 277, sp. 103, female and young, American.—*Falco uliginosus*, *Gmel. Syst. i.* p. 278. *Lath. Ind. p.* 40, sp. 95. *Sabine, Zool. App. to Frankl. Exp. p.* 671, young American.—*Falco rubiginosus*, *It. Poseg.* p. 29. *Lath. Ind. p.* 27, sp. 56, young.—*Falco ranivorus*, *Daudin, Orn. ii.* p. 170. *Lath. Ind. Suppl. p.* 7, young.—*Falco europogistus*, *Daud. Orn. ii.* p. 110, adolescent male.—*Circus europogistus*, *Vieillot, Ois. Am. Sept. i.* p. 36, pl. 8, adolescent male.—*Circus Hudsonius*, *Vieill. l. c. i.* p. 36, pl. 9, young.—*Circus uliginosus*, *Vieill. l. c. i.* p. 37, female and young.—*Circus variegatus*, *Vieill. l. c. i.* p. 37, male changing.—*Circus gallinarius*, *Vieill. Nouv. Dict. d'Hist. Nat. iv.* p. 459.—*Circus cyaneus*, *Id.* xxxi. p. 410.—*Circus cyaneus*, *Boie*.—*Circus ranivorus*, *Vieill. Nouv. Dict. d'Hist. Nat. iv.* p. 456, young African.—*Falco strigiceps*, *Nills. Orn. Succ. i.* p. 21.—*Falco torquatus*, *Briss. Orn. i.* 345, sp. 7. *Id.* 8vo, p. 100, male and female, *Brunn.* sp. 14.—*Falco montanus cinereus*, *Briss. Orn. i.* p. 355, sp. 9, var. A. *Id.* 8vo, p. 112, adolescent male.—*Accipiter Freti Hudsonis*, *Briss. Orn. vi. App. p.* 18, sp. 47.—*Lanarius cinereus*, *Briss. Orn. i.* p. 365, sp. 17. *Id.* 8vo, p. 106.—*Lanarius albicans*, *Briss. i.* p. 367, sp. 18.—*Subbuteo*, *Gessner, Av. p.* 48.—*Pygargus accipiter*, *Ray, Syn. p.* 17, sp. 5. *Will. Orn. p.* 40, pl. 7.—*Falco plumbeus*, cauda tessellata, *Klein, Av. p.* 52, sp. 22.—*Lanarius*, *Aldr. Orn. i.* pl. 381, 382, adult male.—*Lanarius cinereus*, sive *Falco cinereo-albus*, *Frisch*, pl. 79, 80, adult male.—*Falco montanus secundus*, *Aldr. Will. pl.* 9, adult male.—*Albanella*, *Storia degli Ucc. i.* pl. 35, adult male.—*Falco Pygargo*, *Id. i.* pl. 31, female.—Autre Oiseau St Martin,

Belon, Hist. Ois. p. 104.—L'Oiseau St Martin, *Buff. Ois.* i. p. 212. *Id. Pl. Enl.* 459, adult male. *Gerardin, Tabl. Elem. Orn.* i. p. 43.—La Soubuse, *Buff. Ois.* i. p. 215, pl. 9. *Id. Pl. Enl.* 443, young female; 480, young male. *Gerardin, Tabl. Elem. Orn.* i. p. 37, female and young.—Le Grenouillard, *Le Vaill. Ois. Afrique*, i. p. 63, pl. 23, young.—Kore oder Halbweyhe, *Bechst. Tasch. Deutsch.* p. 25, sp. 20. *Meyer and Wolf, Ois. d'Allem.* liv. 27, pl. 5, adult male, pl. 6, female. *Naumann, Vog. Deutsch.* ed. 2, i. pl. 39, fig. 1, adult male; fig. 2, adult female, pl. 38; fig. 2, young male.—Mause Habicht, *Missilauche, Meyer, Boehm. Abh.* vi. p. 313, adult male.—Blue Hawk, *Edw.* v. p. 33, pl. 225, adult male.—Marsh Hawk, *Edw.* p. 173, pl. 291. *Penn. Arct. Zool.* sp. 105. *Lath. Syn.* i. p. 90, sp. 75, var. A. female and young.—Ash-coloured mountain Falcon, *Lath. Syn.* i. p. 94, sp. 78, var. A. adolescent male.—Hen-harrier, *Edw.* pl. 225, very old male. *Will. (Angl.)* p. 172. *Alb.* ii. pl. 5. *Hayes, Brit. Birds*, pl. 1. *Lewin, Brit. Birds*, i. p. 18. *Penn. Brit. Zool.* i. sp. 58, p. 28. *Lath. Syn.* i. p. 88, sp. 74. *Id. Suppl.* p. 22, adult male.—Ring-tail Hawk, *Edw.* iii. pl. 107. *Penn. Arct. Zool.* sp. 106, female and young.—Ring-tail, *Will. (Angl.)* p. 72. *Alb.* iii. pl. 3. *Hayes, Brit. Birds*, pl. 2. *Lewin, Brit. Birds*, i. pl. 18, female. *Id.* pl. 2, fig. 4, the egg. *Penn. Brit. Zool.* sp. 59. *Lath. Syn.* i. p. 89, sp. 75. *Id. Suppl.* p. 22, female and young.—White-rumped Bay Falcon, *Lath. Syn.* p. 54, sp. 34, var. B. young.—Hudson's Bay Ring-tail, *Lath. Syn.* i. p. 91, sp. 76, young.—White Lanner, *Lath. Syn.* i. p. 87, sp. 73, adult male.—Grey Falcon, *Penn. Brit. Zool.* i. sp. 49. *Lewin, Brit. Birds*, i. pl. 15. *Lath. Syn.* i. p. 82, sp. 67, adolescent male.—New York Falcon, *Penn. Arct. Zool.* ii. p. 209, adolescent male.—Ranivorous Falcon, *Lath. Syn. Suppl.* female and young.—White-necked Falcon, *Lath. Syn. Suppl.* p. 30, sp. 101, adult male, South American.—Cayenne Ring-tail, *Lath. Syn.* i. p. 91, sp. 76, var. A. young.—Falco glaucus, the sharp-winged hawk, of a pale sky-blue colour, the tip of the wings black, *Bartr. Trav.* p. 290, adult male.—Falco sub-cæruleus, the sharp-winged hawk, of a dark or dusky blue colour, *Bartr. Trav.* p. 290, adolescent male.—Falco ranivorus, the Marsh Hawk, *Bartr. Trav.* p. 290, young. *Philadelphia Museum. My Collection.*

CIRCUS CYANEUS.—BECHSTEIN.*

Falco (subgen. circus) cyaneus, *Bonap. Synop.* p. 32.—Buteo (circus) cyaneus? var. Americanus.—Hen-Harrier, *North. Zool.* ii. p. 55.

As will be perceived upon a slight inspection of our long and elaborate list of synonyms, this well-known species is found

* There still appears to be a difference of opinion regarding the identity of the European *Circus cyaneus*, or hen-harrier, and the North American *Falco uliginosus* of Wilson.

in almost every part of the globe ; and not only does it seem to have been considered every where distinct, but nearly every

Wilson was of opinion that they were the same, but only judged from descriptions, being unable to obtain specimens from Britain for comparison. The Prince of Musignano thinks they are the same, and repeats the asseveration in his latest correspondence, but still perceives some differences of habit, and in the changes of plumage, that would weigh far, if something more decided could be established. Mr Swainson and Dr Richardson describe it with a query, under the name of *C. Americanus*, and give numerous measurements of specimens, which neither agree with each other, or generally with those of Britain. Though I cannot at present fix on characters, I strongly suspect that North America will at least possess one species distinct from that of Europe, and that the real European one, from its close alliance, is yet confounded with it ;—there is no bird where I have found so much variation in the dimensions. I have always observed the American birds larger than those of this country, and the tarsi stronger and proportionally longer. In America, the species seems remarkably abundant, and certainly differs slightly in habit, &c. ; but it is well known that animals, as well as birds, will accommodate themselves to a difference of circumstances.

The group to which this species belongs is intimately connected on both sides, by, as it were, intermediate species—on the one by *Astur*, on the other by *Buteo*. Those true to the type are, however, at once known, and may be named as that now under discussion, the *C. histrionicus*, *Montagui*, &c. It seems distributed over the world. The colours and changes of plumage in all are very similar ; both sexes are clothed with the same livery until after the second moult, and are so similar as hardly to be distinguished, except by the difference of size. In the males, the change is to shades of grey ; in the females, to a lighter tinge of the reddish or darker browns, which appear to be the prevalent colours of the whole. The feathers of the rump assume a different colour, generally pure white, and show a prominent bar or band during flight. Their form is long and slender, and of no great power ; the wings are of considerable capacity, exhibiting the form adapted for a buoyant rather than rapid flight ; the tail ample. When sitting on the ground, or on a rock, for they very seldom perch on trees, the attitude is very erect, like that of the sparrow-hawks ; but the most remarkable feature is the owl-like disk which surrounds the face, and is in fact nearly similar to that in the long-tailed hawk owls.

The habits of those in Great Britain differ considerably according to the district they inhabit. In a country possessing a considerable proportion of plain and mountain, where I have had the greatest opportunities of attending to them, they always retire, at the commencement of the breeding season, to the wildest hills, and during this time, not one individual will be found in the low country. For several days previous to commencing their nest, the male and female

different appearance which it assumes during its progress through the various and extraordinary changes that its plumage

are seen soaring about, as if in search of, or examining, a proper situation, are very noisy, and toy and cuff each other in the air. When the place is fixed, and the nest completed, the female is left alone; and, when hatching, will not suffer the male to visit the nest, but on his approach rises and drives him with screams to a distance! The nest is made very frequently in a heath bush by the edge of some ravine, and is composed of sticks, with a very slender lining. It is sometimes also formed on one of those places called *scars*, or where there has been a rush on the side of a steep hill after a mountain thunder-shower; here little or no nest is made, and the eggs are merely laid on the bare earth, which has been scraped hollow. In a flat or level country, some common is generally chosen, and the nest is found in a whin or other scrubby bush, sometimes a little way from the ground, as has been remarked in the descriptions of the American birds. The young are well supplied with food, I believe, by both parents, though I have only seen the female in attendance; and I have found in, and near the nest, the common small lizard, stone-chats, and young grouse.

When the young are perfectly grown, they, with the old birds, leave the high country, and return to their old haunts, hunting with regularity the fields of grain, and now commit great havoc among the young game. At night they seem to have general roosting-places, either among whins or long heath, and always on some open spot upon the ground. On a moor of considerable extent, I have seen seven in the space of one acre. They began to approach the sleeping ground about sunset, and before going to the roost, hunted the whole moor, crossing each other, often three or four in view at a time, gliding along in the same manner as that described by Dr Richardson of the *C. Americanus*. Half an hour may be spent in this way. When they approach the roost, they skim three or four times over it, to see that there is no interruption, and then at once drop into the spot. These places are easily found in the day; and the birds may be caught by placing a common rat-trap, or they may be shot in a moonlight night. In both ways I have procured many specimens.

When kept in confinement, they generally roosted on the ground, in a corner of the cage, three or four huddled together; once or twice I have found them perching; during the day, they rested mostly on the ground; and only when alarmed rose to the cross-bars. I have never seen them perch in a wild state.

Their flight is accurately described by our author; and when hunting in this country, it is performed in the same manner, flying low over the ground, beating the brushwood or rough cover, and along the hedges. They never take their prey on the wing; but when pursuing, make a slight dash, and follow it to the place chosen for refuge. I once shot an old female which had driven a covey of partridges into a thick hedge, and was so intent upon watching her prey, that she al-

undergoes according to sex and age, has in each country given rise to a nominal species. At the same time, however, that names were thus inconsiderately multiplied for one bird, two, really distinct, were always confounded together. Analogous in their changes, similar in form and plumage, it was reserved for the acute and ingenious Montague to point out the difference, and establish the two species by permanent characters. The new one was called by him *Falco cineraceus*, and is known by the English name of ash-coloured harrier. It is figured and accurately described in all its states of plumage by Vieillot, in his *Galerie des Oiseaux*, where he has dedicated it to its discoverer, calling it *Circus Montagui*; thus fully apologizing for having, in his article *Buzzard*, of the *New Dictionary of Natural History*, declared it to be a state of the other. How far, however, it may be considered a compliment to change the name given to a species by its discoverer, in order to apply even his own to it, we are at a loss to imagine.

The principal distinctive characters of the two species are to be found in the relative length of the wings and tail, and in the proportional lengths of the primaries. In the ash-coloured harrier, the sixth primary is shorter than the first, the second is much longer than the fifth, and the third is the longest; the wings, when closed, reach to the tip of the tail. In the hen-harrier, the first primary is shorter than the sixth, the second sub-equal to the fifth, and the third equal to the fourth, the longest; the wings closed, not reaching, by more than two

lowed me to approach openly from a distance of nearly half a mile. They are often met with about the sea-coast; and I have seen one repeatedly come to the stake-nets on the Solway Frith, and eat the dead fish that were left there. In hunting, they pursue a regular beat or tract for many days together. I have repeatedly watched a bird for miles, day after day, follow nearly the same line, only diverging on the appearance of prey; and so nearly at one time do they pass the different ranges of their course, that I have placed myself in cover about the time they were expected, often with success; if they returned at all, were never more than a quarter of an hour of variance from their usual time.—ED.

inches, to the tip of the tail, which is also but slightly rounded in the latter, while in the ash-coloured it is cuneiform. Other minor differences are besides observable in the respective sexes and states of both ; but as those we have indicated are the only ones that permanently exist, and may be found at all times, we shall not dwell on the others, especially as Montague's species appears not to inhabit America. We think proper to observe, however, that the adult male of *Falco cineraceus* has the primaries wholly black beneath, while that of the *F. cyaneus* has them black only from the middle to the point ; and that the tail-feathers, pure white in the latter, are in the former spotted beneath. The female in our species is larger than the corresponding sex of the other, though the males in both are nearly of equal size ; and the collar that surrounds the face is strongly marked in ours, whereas it is but little apparent in the other. The *F. cineraceus* has two white spots near the eyes, which are not in the *F. cyaneus*. The young of the former is beneath rusty without spots. Thus, slight but constant differences are seen to represent a species, while the most striking discrepancies in colour, size, and (not in this, but in other instances) even of form, prove mere variations of sex or age ! We cannot wonder at the two real species having always been confounded amidst the chaotic indications of the present.

Even Wilson was not free from the error which had prevailed for so long a period in scientific Europe, that the ring-tail and hen-harrier were two species. Though he did not publish a figure of the present in the adult plumage of the male, he was well acquainted with it as an inhabitant of the Southern States ; for there can be no doubt that it is the much desired blue hawk which he was so anxious to procure ; the only land bird he intended to add to his Ornithology, or at least the only one he left registered in his posthumous list. It was chiefly because he was not aware of this fact, and thought that no blue hawk existed in America corresponding to the European hen-harrier, that Mr Sabine, in the Appendix to

Franklin's *Expedition*, above quoted, persisted in declaring that the marsh-hawk was a distinct species peculiar to America, of which he supposed the Hudson's Bay ring-tail to be the young. The differences which he detected on comparing it with the European ring-tail, must have been owing to the different state of plumage of his specimen of this ultra-changeable species. If, however, he had not mentioned the colours merely, as bringing it nearer to the ash-coloured falcon of Montague, we might be inclined to believe that the specimen he examined was indeed a young bird of that species, which, though as yet unobserved, may, after all, possibly be found in North America. At all events, Wilson's, and the numerous American specimens that have passed under our examination, were all young hen-harriers.

After having stated, that the error of considering the hen-harrier and ring-tail as different species had prevailed for years in Europe, it is but just to mention, that Aldrovandi, Brisson, Ray, and others of the older authors, were perfectly in accordance with nature on this point. It was perhaps with Linné, or at least with Buffon, Gmelin, Pennant, and Latham himself, who afterwards corrected it, that the error originated. Latham, confident of his own observations, and those of Pennant, who had found males of the species said to be the female of the *Falco cyaneus* (hen-harrier), and not reflecting that these males might be the young, exclaims, "Authors have never blundered more than in making this bird (the ring-tail) the same species with the last mentioned, (hen-harrier;)" an opinion that he was afterwards obliged to recant. In physical science, we cannot be too cautious in rejecting facts, nor too careful in distinguishing, in an author's statement, what has passed under his own eyes, however extraordinary it may seem, from the inference he draws from it. Thus, to apply the principle in this instance, Latham might have reconciled the fact of males and females being found in the plumage of the ring-tail; with the others, that no females were ever found under

the dress of the hen-harrier, and that some ring-tails would gradually change into hen-harriers.

Whether or not the marsh-hawk of America was the same with the ring-tail of Europe, Wilson would not take upon himself to pronounce, as he has left to his bird the distinctive name of *Falco uliginosus*; though he positively states, that, in his opinion, they are but one species, and even rejects as false, and not existing, the only character on which the specific distinction was based, that of the American having "strong, thick, and short legs," instead of having them long and slender. For want of opportunity, however, of actually comparing specimens from both continents, he could choose no other course than the one he has followed; and so great appears to have been the deference of ornithologists for this extraordinary man, that, while they have unhesitatingly quoted as synonymous with the European hen-harrier the African specimens described by Le Vaillant, and even the various nominal species created or adopted by Vieillot as North American, the *Falco uliginosus* of former authors has been respected, probably, as the marsh-hawk of Wilson! But the latter is not, more than the others, entitled to be admitted as distinct, being merely the present in its youthful dress.

The hen-harrier belongs to the subgenus *Circus*, which in English we shall call harrier, the name of buzzard being appropriated to the *Buteones*. Though perfectly well marked in the typical species, such as this, the group to which our bird belongs passes insensibly into others, but especially into that called *Buteo*, some even of the North American species being intermediate between them. Whenever the groups of falcons shall be elevated to the rank of genera, it will perhaps be found expedient to unite *circus* and *buteo*, as they do not differ much more from each other than our two sections of hawks; those with long and slender legs, and those with short stout legs, *Astur* and *Sparvius* of authors, the line of demarcation being quite as difficult to be drawn.

The harriers are distinguished in their tribe by their weak, much compressed bill, destitute of a tooth or sharp process, but with a strongly marked lobe ; their short and bristly cere ; their long, slender, and scutellated tarsi ; their slender toes, of which the outer are connected at base by a membrane ; their nails, subequal, weak, channelled beneath, much incurved, and extremely sharp : a very remarkable characteristic is exhibited in their long wings, subequal to the tail, which is large, and even, or slightly rounded at tip : their first quill is very short, always shorter than the fifth, and the third or fourth is the longest. Their slender body and elegant shape chiefly distinguish them from their allies, the buzzards. They may be farther subdivided into those in which the female at least is possessed of that curious facial ring of scaly or stiff feathers, so remarkable in the owls, and those entirely destitute of it. One species only is found in the United States, which belongs to the first section, and cannot be confounded with any other than that from which we have thought proper to distinguish it at the beginning of this article. In this section, the female differs essentially from the male, the young being similar to her in colour. The latter change wonderfully as they advance in age, to which circumstance is owing the wanton multiplication that has been made of the species. In those which compose the second section, the changes are most extraordinary, since, while the adult male is of a very uniform light colour, approaching to white, the female and young are very dark, and much spotted and banded : they are also much more conspicuously distinguished by the rigid facial ring.

These birds are bold, and somewhat distinguished for their agility, especially when compared with the buzzards ; and in gracefulness of flight they are hardly inferior to the true falcons. They do not chase well on the wing, and fly usually at no great height, making frequent circuitous sweeps, rarely flapping their wings, and strike their prey upon the ground. Their food consists of mice, and the young of other quadru-

ped, reptiles, fishes, young birds, especially of those that build on the ground, or even adult water birds, seizing them by surprise, and do not disdain insects; for which habits they are ranked among the ignoble birds of prey. Unlike most other large birds of their family, they quarter their victims previously to swallowing them, an operation which they always perform on the ground. Morasses and level districts are their favourite haunts, being generally observed sailing low along the surface, or in the neighbourhood of waters, migrating when they are frozen. They build in marshy places, among high grass, bushes, or in the low forks or branches of trees; the female laying four or five round eggs, entirely white, or whitish, without spots. During the nuptial season, the males are observed to soar to a considerable height, and remain suspended in the air for a length of time.

The male hen-harrier is eighteen inches long, and forty-one in extent; the bill is blackish horn colour; the cere greenish yellow, almost hidden by the bristles projecting from the base of the bill; the irides are yellow. The head, neck, upper part of the breast, back, scapulars, upper wing-coverts, and middle tail-feathers, pale bluish grey, somewhat darker on the scapulars; the upper coverts, being pure white, constitute what is called a white rump, though that part is of the colour of the back, but a shade lighter; breast, belly, flanks, thighs, under wing-coverts, and under tail-coverts, pure white, without any spot or streak. The wings measure nearly fourteen inches, and, when closed, reach only two-thirds the length of the tail, which is eight and a half inches long, extending by more than two inches beyond them; the primaries, of which the first is shorter than the sixth, the second and fifth subequal, and the third and fourth longest, are blackish, paler on the edges, and white at their origin, which is more conspicuous on their inferior surface; the secondaries have more of the white, being chiefly bluish grey on the outer web only, and at the point, which is considerably darker. The tail is but very

slightly rounded. All the tail-feathers have white shafts, and are pure white beneath; the middle ones are bluish grey, the lateral almost purely white; somewhat greyish on the outer vane, and obsoletely barred with blackish grey on the inner. The feet are bright yellow, and the claws black; the tarsus is three inches long, and feathered in front for an inch.

The female is larger, being between twenty and twenty-one inches long, and between forty-four and forty-seven in extent; the tarsi, wings, and tail, proportionally longer, but strictly corresponding with those of the male. The general colour above is chocolate-brown, more or less varied with yellowish rufous; the space round the orbits is whitish, and the auriculars are brown; the small stiff feathers forming the well-marked collar, or ruff, are whitish rusty, blackish brown along the shaft; the feathers of the head and neck are of a darker brown, conspicuously margined with yellowish rusty; on the nucha, for a large space, the plumage is white at the base, as well as on the sides of the feathers, so that a little of that colour appears, even without separating them; those of the back and rump are hardly, if at all, skirted with yellowish rusty, but the scapulars and wing-coverts have each four regular large round spots of that colour, of which those farthest from the base lie generally uncovered; the upper tail-coverts are pure white, often, but not always, with a few rusty spots, constituting the so-called white rump, which is a constant mark of the species in all its states of plumage. The throat, breast, belly, vent, and femorals, pale yellowish rusty, streaked lengthwise with large acuminate brown spots, darker and larger on the breast, and especially the under wing-coverts, obsolete on the lower parts of the body, which are not spotted. The quills are dark brown, whitish on the inner vane, and transversely banded with blackish; the bands are much more conspicuous on the inferior surface, where the ground colour is greyish white. The tail is of a bright yellowish rusty, the two middle tail-feathers, dark cinereous; all are pure white at the origin, and

regularly crossed with four or five broad blackish bands ; their tips are more whitish, and the inferior surface of a greyish white, like that of the quills, but very slightly tinged with rusty, the blackish bands appearing to great advantage, except on the outer feathers, where they are obsolete, being less defined even above.

The young male is almost perfectly similar in appearance to the adult female, (which is not the case in the ash-coloured harrier,) being however more varied with rusty, and easily distinguished by its smaller size. It is in this state that Wilson has taken the species, his very accurate description being that of a young female. The male retains this plumage until he is two years old, after which he gradually assumes the grey plumage peculiar to the adult : of course they exhibit almost as many gradations as specimens, according to their more or less advanced age. The ash and white appear varied, or mingled with rusty ; the wings, and especially the tail, exhibiting more or less indications of the bands of the young plumage. The male, when he may be called already adult, varies by still exhibiting the remains of bands on the tail, more or less marked or obliterated by the yellowish edges of the feathers of the back and wings, and especially by retaining on the hindhead a space tinged with rusty, with blackish spots. This space is more or less indicated, in the greater part, both of the American and European specimens I have examined. Finally, they are known by retaining traces of the yellowish of the inferior surface, in larger or smaller spots, chiefly on the belly, flanks, and under tail-coverts.

For the greater embellishment of the plate, we have chosen to represent one of these very nearly, but not quite adult males, in preference to a perfectly mature bird, which may easily be figured to the mind by destroying every trace of spot or bar. It is, moreover, in this dress that the adult is met with in the Middle and Northern States, where it is very rare, and we have never seen a specimen quite mature, though the young

are tolerably common ; as if the parents sent their children on a tour to finish their education, then to return and marry, and remain contentedly at home. The specimen here figured was shot on Long Island, and was preserved in Scudder's Museum, New York.

Its total length is eighteen inches, breadth forty-one ; the bill, bluish black ; cere, irides, and feet, yellow ; claws, black. The plumage above is bluish ashy, much darker on the scapulars, and, with the feather-shafts, blackish ; beneath, white, slightly cream-coloured on the breast ; the belly, flanks, and lower tail-coverts, with small arrow-shaped spots of yellowish rusty ; the long axillary feathers are crossed with several such spots, taking the appearance of bands ; the upper tail-coverts are pure white ; the primaries, dusky blackish at the point, edged with paler, and somewhat hoary on the outer vane ; at base, white internally and beneath. The tail is altogether of a paler ash than the body, tipped with whitish, and with a broad blackish subterminal band ; all the tail-feathers are pure white at their origin under the coverts, the lateral being sub-banded with blackish and white on their inner vanes, and the outer on the greater part of the outer web also ; the shafts are varied with black and white.

The hen-harrier's favourite haunts are rich and extensive plains, and low grounds. Though preferring open and champaign countries, and seeming to have an antipathy to forests, which it always shuns, it does not, like the ash-coloured harrier, confine itself to marshes, but is also seen in dry countries, if level. We are informed by Wilson, that it is much esteemed by the southern planters, for the services it renders in preventing the depredations of the rice-birds upon their crops. Cautious and vigilant, it is not only by the facial disk that this bird approaches the owls, but also by a habit of chasing in the morning and evening, at twilight, and occasionally at night, when the moon shines. Falconers reckon it among the ignoble hawks. Cruel, though cowardly, it searches every where for

victims, but selects them only among weak and helpless objects. It preys on moles, mice, young birds, and is very destructive to game; and does not spare fishes, snakes, insects, or even worms. Its flight is always low, but, notwithstanding, rapid, smooth, and buoyant. It is commonly observed sailing over marshes, or perched on trees near them, whence it pounces suddenly upon its prey. When it has thus struck at an object, if it re-appears quickly from the grass or reeds, it is a proof that it has missed its aim; for, if otherwise, its prey is devoured on the spot.

It breeds in open wastes, frequently in thick furze coverts, among reeds, marshy bushes, the low branches of trees, but generally on the ground. The nest is built of sticks, reeds, straw, leaves, and similar materials, heaped together, and is lined with feathers, hair, or other soft substances; it contains from three to six, but generally four or five, pale-bluish-white eggs, large and round at each end; the young are born covered with white down, to which succeed small feathers of a rust colour, varied with brown and black. If any one approaches the nest during the period of rearing the young, the parents evince the greatest alarm, hovering around, and expressing their anxiety by repeating the syllables, *geg, geg, gag*; or *ge, ge, ne, ge, ge*. Crows manifest a particular hostility to this species, and destroy numbers of their nests.

The hen-harrier is widely spread over both continents, perhaps more than any other land-bird, though it is nowhere remarkably numerous. In the northern countries of America, it is a migratory species, extending its wanderings from Florida to Hudson's Bay. It is not known to breed in the Northern, or even in the Middle States, where the adults are but rarely seen. In the Southern parts of the Union, and especially in Florida, they are rather common, in all their varieties of plumage. The species is also found in the West Indies, Cayenne, and probably has an extensive range in South America. It is found throughout Britain, Germany, Italy, the North of Africa, and the northern portion of Asia. It is very common in France

and the Netherlands, is found in Russia and Sweden, but does not inhabit the north of Norway, being by no means an Arctic bird. It is again met with in the southern parts of Africa, near the Cape of Good Hope, and is not uncommon all along the eastern coast of that continent. In Switzerland, and other mountainous countries, it is of very rare occurrence.

STELLER'S JAY.—GARRULUS STELLERI.—PLATE XIII. FIG. 1.

Corvus Stelleri, *Gmel. Syst.* i. p. 370, sp. 27. *Lath. Ind.* p. 158, sp. 20. *Nob. Suppl. Syn. Birds U. S.* sp. 63, bis, in *Zool. Journ. Lond.* v. p. 2. *Id. in App. Gen. N. A. Birds in Ann. Lyc. N. Y.* p. 438.—*Garrulus coronatus?* Swainson, *Syn. Birds Mex.* sp. 67, in *Phil. Mag. N. S.* i. p. 437, old bird?—*Garrulus Stelleri*, *Viell. Nouv. Dict. d'Hist. Nat.* xii. p. 481.—Geai de Steller, *Daud. Orn.* ii. p. 248.—Steller's crow, *Penn. Arct. Zool.* sp. 139. *Lath. Syn.* i. p. 387, sp. 21. *Id. 2d Suppl.* viii. p. 111, sp. 8. *Id. Gen. Hist.* iii. p. 56, sp. 58.—Collection of Mr Leadbeater, in London.

GARRULUS STELLERI.—VIEILLOT.*

Garrulus Stellaris, *North. Zool.* ii. p. 294.—*Pica Stelleri*, *Wagl. Syst. Av. Pica*, No. 10.

To the enlightened liberality and zeal for science of that distinguished collector, Mr Leadbeater, of London, we, and the American public, are now indebted for the appearance of the first figure ever given of this handsome jay. Trusting his precious specimens twice to the mercy of the waves, he confided to us this, together with several other still more rare and valuable North American birds, which no consideration would have induced him to part with entirely, to have them drawn,

* This species, though very similar, is distinct from the *Garrulus coronatus*, Swainson, which it is not impossible may yet be added as a straggler to the northern continent. We may here mention the splendid Columbia jay, the *Pica Bullockii* of Wagler, which Mr Audubon has figured. It is a native of Mexico and California, and a specimen was procured by Mr Audubon from the Columbia River. It may be considered only as a straggler, and very rare. This, and one or two others, the Indian *Garrulus erythrophynchus*, are remarkable for the length of their tail. The body of the American bird is not so large as that of the common jay, but the total length is thirty-one inches.—Ed.

engraved, and published, on this side of the Atlantic. It is the frequent exercise of similar disinterestedness in the promotion of scientific objects, that has procured for Mr Leadbeater the distinction with which he is daily honoured by learned bodies and individuals.

The Steller's jay is one of those obsolete species alluded to in the preface to this volume. It is mentioned by Pallas as having been shot by Steller, when Behring's crew landed upon the coast of America. It was first described by Latham, from a specimen in Sir Joseph Banks's collection, from Nootka Sound, and on his authority has been admitted into all subsequent compilations. The species is indeed too well characterised to be doubted, and appears moreover to have been known to Temminck, as it is cited by him as a true jay in his *Analysis of a General System*. Nevertheless, adhering strictly to our plan of not admitting into the Ornithology of the United States, any but such as we had personally examined, we did not include this species either in our Catalogue, or Synopsis, of the birds of this country; and it is but recently that Mr Leadbeater's specimen has enabled us to add it to our list.

In elevating our subgenus *Garrulus* to the rank of a genus, we merely conform to the dictates of nature; in this instance coinciding with Temminck, whose intention it is, as he informs us, to include in it the jays and magpies, leaving the name of *Corvus* for those species which are distinguished by their black plumage, and short and even tails. These birds are on every account well worthy of this distinction, and we cheerfully adopt an arrangement which we deem consonant with nature: but we cannot agree to the change of termination (*Garrula*) which he has attempted to introduce, under the pretence that his genus is more extensive than the genus *Garrulus* of former authors. That genus was, in fact, formed by Brisson, and afterwards by Linné, united with *Corvus*. This latter genus of Linné certainly contained within itself the constituents of several very natural genera; but the additions made to it by Gmelin and Latham rendered it an utter chaos, where every

new species with a stout bill took its place, in defiance of the genuine characters. Under such circumstances the task of the ornithologist, who professed to be guided by philosophical principles, was, doubtless, not merely to subdivide, but to make an entire reformation. Illiger, with his usual judgment, perceived the evil, and attempted its remedy; but his genus was still too extensive, and, besides, was not natural, as it included the wax-wings, a very distinct genus, that had always been forced into others. The only advantage it possessed over that of Latham was, that all the species it comprised exhibited its artificial characters. As restricted by Brisson, Vieillot, and lately adopted by Temminck, by whom it was previously much limited, it is perfectly natural; though we cannot help remarking that some even of the eighteen species enumerated by the latter in his article on the generalities of the crows, in the *Planches Coloriées*, may again be separated, such as *Corvus Columbianus*, Wils., which ought, perhaps, to constitute a genus by itself. Vieillot, and other recent writers on ornithology, have long since adopted the genus *Garrulus* as distinct even from *Pica*, though we prefer retaining the latter merely as a subgenus of *Garrulus*, since it is absolutely impossible to draw the line of separation between them without resorting to minute and complicated distinctions.

The jays and magpies, in fact, require to be distinguished from the crows, as a genus, on account of their form, colour, habits, and even their osseous structure. Their upper mandible, somewhat inflected at tip, and the navicular shape of the lower, afford obvious characteristic marks. Their wings, too, are rather short, and do not reach by a considerable space to the tip of the tail, which is long, and more or less rounded, sometimes greatly wedge-shaped. On the contrary, the crows have long wings, reaching almost or quite to the extremity of the tail, which is short, and even at tip. The identity in the shape of the wings and tail, and even the colours of their plumage, which agree in all the species, and in different climates, render the crows a very natural and well marked group. The

black plumage and offensive odour, which cause them to be viewed every where with disgust, and even somewhat of superstitious dread, are far from being characteristics of the neat and elegant jays.

The true *Corvi* are distinguished by the following traits:—Bill, very stout; feet, very strong; general form, robust; flight, highly sustained, straight, or circular, as if performing evolutions in the air. They live, travel, and breed in large bands; affect wide plains and cultivated grounds, only retiring to the adjacent forests to roost, and are always seen on high and naked trees, but never on thickets, shrubs, or bushes. Their voice is deep and hoarse. They are more or less fond of cattle, some species preying on the vermin that infest them. Though devouring all kinds of food, yet their propensity is decidedly carnivorous. Their black, unvaried colours, are remarkably opposed to the bright and cheerful vesture of the jays, whose plumage is of a much looser texture, the feathers being longer and much more downy.

The jays are again more particularly distinguished from the magpies by their head-feathers being long and silky, and always erectile, (especially when the bird is excited or angry,) even when they are not decidedly crested, as is the case in many species. Their colours are also gayer, and more brilliant, with more or less of blue. The species of both these sections are garrulous, noisy, and inquisitive. Together with the crows, they are eminently distinguished by their stout, cultrate bill, generally covered at base with setaceous, incumbent, porrect feathers, hiding the nostrils. The female is similar to the male in appearance, and the young differ but little, and only during the first year, from the adult. They are very shy, suspicious, possessed of an acute sense of smelling, and evince great sagacity in avoiding snares. They are omnivorous in the fullest extent of the word, feeding on grains, insects, berries, and even flesh and eggs. When they have caught a small bird, which they can only do when feeble and sickly, or ensnared, they place it under their feet, and with

their bill tear it to pieces, swallowing each piece separately. Nevertheless, they give the preference to grains or fruits. The northern species are wary and provident, collecting stores of food for the winter. They are very petulant; their motions quick and abrupt, and their sensations lively. When alarmed, by the appearance of a dog, fox, or other living or dead object, they rally together by a peculiar note, as if they would impose upon it by their numbers and disagreeable noise. When on the ground, they display great activity; or if on trees, they are continually leaping about from branch to branch, and hardly ever alight on dead or naked ones. They are generally met with in forests, seldom in open plains; their favourite resort is among the closest and thickest woods. Less suspicious and cunning than the crows, or even the magpies, they may be decoyed into snares and taken in great numbers, especially by imitating the voice of one of their own species in difficulties, or by forcing a captive individual to cry. They live in families, or by pairs, the greater portion of the year; and though considerable numbers may be seen travelling at once, they always keep at intervals from each other, and never in close flocks like the crows. They are easily tamed, and are susceptible of attachment; learn readily to articulate words, and imitate the cries of different animals. They have a troublesome propensity to purloin and conceal small objects not useful to themselves, and as jewels and precious metals are peculiarly apt to attract their notice, they have been the cause, when kept as pets, of serious mischief. Every one is familiar with the story of the thieving magpie, become so celebrated by the music of Rossini, and which is founded on fact.

The jays breed in woods, forests, orchards, preferring old and very shaded trees, placing their nests in the centre against the body, or at the bifurcation of large limbs. The nest is built without art, and is formed of twigs and roots, whose capillary fibres serve as a lining inside; the eggs are from four to six. The old ones keep the food for their young in the oesophagus, whence they can bring it up when wanted. The

young are born naked, and remain for a long period in the nest, being still fed for some time by the parents after they are full fledged.

Unlike the melancholy crows, which step gravely, lifting one foot after the other, the jays and magpies move about nimbly by hopping, and are constantly in motion while on the ground. Their flight is moreover neither protracted nor elevated, but merely from tree to tree, and from branch to branch, shooting straight forward at once when wishing to go any distance, now and then flapping their wings, and hovering as they descend, when about to alight. It is quite the reverse with the crows; and all these characters are of the greatest importance in the establishment of natural groups.

While the true *Corvi*, by their stout and almost hooked bill, and the carnivorous habits of some species, exhibit on the one hand the gradual passage from the vultures, and on the other, by the slender-billed species, the transition to the crow blackbirds and troopials; the affinities of the jays present nice gradations to the genera already dismembered from *Corvus*, such as *Nucifraga*, *Pyrrhocorax*, *Bombycilla*, and at the same time form other links with *Lanius*, and even with *Turdus* and *Acridotheres*.

There is one remarkable analogy of the jays which we cannot pass over in silence. It is, however, singular, and hitherto unsuspected, with the titmouse (*Parus*). Form, habits, even the peculiar looseness of texture of the plumage, all are similar in these genera, hitherto estimated so widely different. This resemblance extends even to colour in some species: it might even be asked, what else, in fact, is the Canada jay than a large titmouse; and what the crested titmouse but a small jay? The blue colour of the typical jays predominates, moreover, in other *Pari*, and the *P. caudatus* of Europe has also the long, cuneiform tail of some, no less than *P. bicolor* their crest.

The genus *Garrulus* has an extensive geographical range, being found in all latitudes and longitudes. It is composed of

about thirty species, nearly half of which may more properly be called jays; of the latter, there are but two in Europe, and though we have doubled the number given by Wilson, we think that others will yet be discovered in the wild western tracts of this continent. There exist imperfect accounts of two or three species inhabiting the countries near the Rocky Mountains, one of which is probably that here described, and others may prove to be some of the newly discovered Mexican species, one of which, the *Garrula gubernatrix* of Temminck, is so proudly beautiful.

The Steller's jay is more than twelve inches long. The bill measures one inch and a half, is entire, and totally black; the bristly feathers over the nostrils are also wholly black. The feathers of the head are greatly elongated, forming a large crest, more than two and a half inches long, and, with the whole head and neck, entirely deep brownish black, greyish on the throat; the feathers on each side of the front are slightly tipped with bright and light azure, thus forming a dozen or more of small dots on that part; on the neck, the brown becomes lighter, and extends down on the back, occupying the scapulars as well as the inner wing-coverts; on the middle of the back the brown becomes somewhat tinged with bluish, and blends gradually into a fine bright blue colour, covering the rump and the upper tail-coverts; all the inferior parts from the neck, at the lower part of which the dusky colour passes into blue, are blue, somewhat tinged with grey, which is the general colour of the base of the plumage. The wings are nearly six inches in length; the fourth, fifth, and sixth primaries being subequal and longest. All the outer wing-coverts and the secondaries are blue, faintly crossed with obsolete blackish lines; the under wing-coverts are dusky; the primaries are dark dusky, and, with the exception of the outer ones, at tip are edged or tinged with blue; on the inner vane, the secondaries are blackish, but on the outer, they are deep glossy blue. The tail is five inches and a half long, and but slightly rounded; it is of a deep glossy azure blue, more brilliant on the

outer vanes of the feathers, the inner being slightly tinged with dusky ; an indication of obliterated, transverse blackish lines, may be perceived in certain lights on almost all the tail-feathers in our specimen, and we have no doubt that on others they are more marked ; the shafts both of the quills and tail-feathers are black. The tarsus is an inch and three quarters long ; the femorals, blackish, slightly mixed with bluish at the joint ; the feet and nails are entirely black.

This description is taken from the individual represented in the plate, which was killed near the Oregan, or Columbia River. Another specimen, from Mexico, also in Mr Leadbeater's collection, exhibited greater brilliancy of plumage, being principally distinguished, as nearly as our recollection serves, by the black colour of the anterior parts being less extended, and by having more of silvery bluish (indicated in our bird) on the front, extending to the throat and eyebrows, and somewhat round the head. This, without any hesitation, we considered as a more perfect specimen, a mere variety of age, and would have had our figure made from it ; but having been informed that an English ornithologist (his name and that of the species were not mentioned, or, if they were, we have forgotten them) considered it as a new Mexican species, we have preferred, notwithstanding our conviction, strictly copying the less brilliant specimen procured in the United States territory, to the more beautiful one from Mexico. The appearance of *Garrulus coronatus* of Mr Swainson, in the Synopsis before quoted, reminded us of the circumstance, and we have therefore quoted it with doubt. Our two birds agree perfectly in markings and dimensions. Of the habits of the Steller's jay, little or nothing is known. It inhabits the western territory of the United States, beyond the Rocky Mountains, extending along the western coasts of North America, at least from California to Nootka Sound ; is common on the Oregan, and found also in Mexico, on the table land, and in Central America.

It is a curious fact in ornithological geography, that of the four jays, now admitted into the Fauna of the United States, while the common blue jay, the only eastern representative of the genus, spreads widely throughout the continent, the three others should be confined in their range each to a particular section of country. Thus, the Canada jay is the northern, the Florida jay is the southern, and the present the western representative of the genus. It is probable that another species at least, our *Garrulus ultramarinus*, from Mexico, will soon be admitted as the central jay. To the latter bird, Mr Swainson, who had probably not seen my paper describing it, (published more than two years ago in the *Journal of the Academy of Natural Sciences*,) gives the name of *G. sordidus*; at least, judging from his short phrase, and the dimensions and locality, they are the same.

LAPLAND LONGSPUR.—EMBERIZA LAPPONICA.

PLATE XIII. FIG. 1, MALE ; FIG. 2, FEMALE.

Fringilla Lapponica, *Linn. Syst.* i. p. 317, sp. 1. *Faun. Suec.* sp. 235. *Gmel. Syst.* i. p. 900, sp. 1. *Retz. Faun. Suec.* p. 242, sp. 119. *Forst. Ph. Tr.* lxii. p. 404. *Fabr. Faun. Grænl.* p. 119, sp. 8. *Lath. Ind.* p. 440, sp. 18. *Ubers.* i. p. 289, sp. 18.—*Fringilla montana*, *Briss. Orn.* iii. p. 160, sp. 38. *Klein. Av.* p. 92, sp. 10.—*Fringilla calcarata*, *Pallas, It.* p. 710, sp. 20, t. E. *Id.* in 4to, French Transl. iii. pl. 1. *Meyer and Wolf, Tasch. Deutschl.* i. p. 176, sp. 13.—*Emberiza Lapponica*, *Nilsson, Orn. Suec.* i. p. 157, sp. 76. *Ranz. El. Zool.* vi. p. 24.—*Emberiza calcarata*, *Temm. Man. Orn.* i. p. 322. *Brehm, Lebhr. Eur. Vog.* i. p. 221. *Richardson, App. to Parry's 2d Voy.* p. 345.—*Passerina Lapponica*, *Vieill. Nouv. Dict. d'Hist. Nat.* xxv. p. 12.—*Plectrophanes calcaratus*, *Meyer, Tasch.* iii. p. 176, sp. 13.—*Plectrophanes Lapponica*, *Selby, in Trans. Linn. Soc.* xv. p. 156, pl. 1, young.—*Montifringilla congener*, *Aldrov. Orn.* ii. p. 821, pl. 823.—*Le Grand Montain*, *Buff. Ois.* iv. p. 134.—*Le Pinson de Montagne*, *Gerardin, Tabl. Elem. d'Orn.* i. p. 186.—*Lerchen Finck*, *Bechst. Naturg. Deutsch.* iii. p. 246, sp. 16. *Naum. Nachtr.* iii. p. 25, pl. 20, B. female ; plate 40, male in autumn.—*Greater Brambling*, *Alb.* iii. p. 59, pl. 63.—*Lapland Finch*, *Penn. Arct.* ii. sp. 259. *Lath. Syn.* iv. p. 263, sp. 14. *Ubers.* iii. p. 256, sp. 14. My Collection.

PLECTROPHANES LAPPONICA—SELBY.*

Emberiza (subgen. *plectrophanes*) *Lapponica*, *Bonap. Synop. App.* p. 440. *North. Zool.* ii. p. 248.

THIS species, long since known to inhabit the desolate Arctic regions of both continents, is now for the first time introduced into the Fauna of the United States ; having been omitted both in our Synopsis and Catalogue. It is entitled to be ranked among the birds of this country, from the fact, that a few stragglers out of the numerous bands which descend in winter to comparatively warm latitudes, show themselves almost every year in the higher unsettled parts of Maine, Michigan, and the north-western territory. Even larger flocks are known not unfrequently to enter the territory of the Union ; where, contrary to what is generally supposed, they

* See vol. i. p. 325.

are observed to alight on trees, as well as on the ground, notwithstanding their long and straight hind nail. We think it highly probable that some individuals, especially in their youth, visit in cold winters the mountainous districts of the Middle States; as they are well known in Europe to wander or stray to the more temperate climates of Germany, France, England, and especially Switzerland; in all which countries, however, the old birds are never seen. It is not extraordinary that they should never have been observed in the Atlantic States, as they are nowhere found in maritime countries.

No figure of the adult male in perfect plumage has before now, we believe, been given; and no representation at all is to be met with in the more generally accessible books, or collections of plates. Mr Selby has lately published a figure of the young in the *Linnean Transactions*, and it will also, we presume, appear in his splendid work, which yields to none but Naumann's, Wolf's, and Wilson's, in point of accuracy and character. That recorded by him appears to be the first instance of an individual having been found in Britain. The species is common in the hilly districts of eastern Europe, but is chiefly confined within the Polar circle, though found abundantly in all the northern mountainous districts of Europe and Asia, particularly Siberia and Lapland. It is sometimes known to descend in autumn and winter, and, though very rarely, in spring, either singly and astray, or in immense clouds, into the north and middle of Germany. Great numbers were seen in the neighbourhood of Frankfort on the Main, in the middle of November, 1821. In France, they are restricted to the loftiest and most inaccessible mountains, where they are very rare; so much so, that in those of the Vosges, Gerardin only met with a single specimen after six years' researches, though more frequent in the mountains of Dauphiné. They are common during summer in Arctic America; and are found at Hudson's Bay in winter, not appearing before November: near the Severn river they haunt the cedar trees, upon whose berries they feed exclusively. These birds live in large flocks,

and are of so social a disposition, that when separated from their own species, or when in small parties, they always join company with the common lark of Europe; or in America, with some of the different snow birds. They feed chiefly on seeds, especially of the dwarf willows growing in frozen and mountainous countries, but occasionally also on leaves, grass, and insects. They breed on small hillocks, in open marshy fields; the nest is loosely constructed with moss and grasses, lined with a few feathers. The female lays five or six oblong eggs, yellowish rusty, somewhat clouded with brown. The Lapland longspur, like the larks, never sings but suspended aloft in the air, at which time it utters a few agreeable and melodious notes.

As may be seen by the synonyms at the head of this article, this bird has been condemned by nomenclators to fluctuate between different genera. But between *Fringilla* and *Emberiza* it is not difficult to decide, as it possesses all the characters of the latter in an eminent degree, even more so than its near relative the snow bunting, which has never been misplaced. It has even the palatine knob of *Emberiza*, and much more distinctly marked than in the snow bunting (*Emberiza nivalis*.) It has been erroneously placed in *Fringilla*, merely on account of its bill being somewhat wider and more conic.

Meyer has lately proposed, for the two just mentioned nearly allied species, a new genus under the name *Plectrophanes*, (corresponding to the English name we have used.) This we have adopted as a subgenus, and are almost inclined to admit as an independent genus, being well characterised both by form and habits. The two species of *Plectrophanes*, to which we apply the name of longspur, together with the buntings, are well distinguished from the finches by their upper mandible, contracted and narrower than the lower, their palatine tubercle, &c. From the typical *Emberizæ* they differ remarkably by the length and straightness of their hind nail, and the form of their wings, which, owing to the first and second primaries being longest, are acute. In the true buntings, the first quill is

shorter than the second and third, which are longest. This species, in all its changeable dresses, may at once be known by its straight and very long hind nail, which is twice as long as the toe. The bill is also stronger and longer than in the other species.

The longspurs are strictly Arctic birds, only descending in the most severe and snowy winters to less rigorous climates, and never to the temperate zone, except on the mountains. Hence they may, with the greatest propriety, be called snow birds. They frequent open countries, plains, and desert regions, never inhabiting forests. They run swiftly, advancing by successive steps like the larks, (which they resemble in habits, as well as in the form of their hind nail,) and not by hopping, like the buntings. The conformation of their wings also gives them superior powers of flight to their allied genera, the buntings and finches. Their moult appears to be double, and, notwithstanding Temminck's and my own statement to the contrary, they differ much in their summer and winter plumage. Owing to this, the species have been thoughtlessly multiplied; there are, in reality, but two, the present, and snow bunting of Wilson.

The male Lapland longspur, in full breeding dress, is nearly seven inches long, and twelve and a quarter in extent; the bill is nearly half an inch long, yellow, blackish at the point; the irides are hazel, and the feet dusky; the head is thickly furnished with feathers; the forepart of the neck, throat, and the breast, are glossy black; the hind-head is of a fine reddish rusty; a white line arises from the base of the bill to the eye, behind which it becomes wider, descending on the sides of the neck somewhat round the breast; the belly and vent are white; the flanks posteriorly with long blackish streaks; the back and scapulars are brownish black, the feathers being skirted with rusty; the smaller wing-coverts are blackish, margined with white; the greater coverts margined with rufous, and white at tip, forming two white bands across the wings; the primaries are blackish, edged with white; secondaries

emarginated at tip, dusky, edged with rusty ; the wings, when closed, reach to three-fourths the tail ; the tail is two and a half inches in length, rather forked, and of a blackish colour ; the outer feather on each side with a white cuneiform spot ; and the outer web almost entirely white ; the second with a white cuneiform spot only. The hind nail is almost an inch long.

The adult female is somewhat smaller than the male. In spring, she has the top of the head, the shoulders, back, and wing-coverts, brownish black, the feathers being edged with rusty ; the sides of the head, blackish, intermixed with rusty ; over the eyebrows a whitish line, as in the male, tinged with rusty ; the nucha and rump are brownish rusty, with small black spots ; the throat is white, encircled with brown ; remaining inferior parts, white ; wings and tail as in the other sex.

The male in autumn and winter has the bill brownish yellow ; irides and feet, brownish. Head, black, varied with small spots of rusty ; auriculars, partly encircled with black feathers ; throat, yellowish white, finely streaked with deep black. Foreneck and breast, black, mixed with greyish white ; the line passing through the eye down the breast, yellowish white, becoming darker on the breast ; lower surface from the breast, white, spotted on the flanks. Wings, deep blackish chestnut, crossed by two white lines ; primaries on the inside at tip, margined with white. Tail, forked, brownish black, all the feathers margined with rusty, the two outer with a white cuneiform spot at tip.

The dress of the female in autumn and winter is as follows : Head, and neck above, shoulders, and back, greyish rusty, with blackish spots, the rusty predominating on the neck and rump ; the superciliar line, whitish rusty, uniting with a white streak from the angle of the bill ; throat, white each side, with a brownish line ; upper part of the breast, greyish, spotted with black ; inferior parts, white ; the flanks with longitudinal blackish marks.

The young of both sexes, during the first year, are of a yellowish brown above, tinged with greyish, streaked and spotted with blackish, the shafts of the feathers being of that colour; the cheeks and auriculars are brownish, the latter mixed with black; a small blackish spot, that spreads as the bird advances in age, is already visible near the opening of the ears; above the eye is a broad streak of pale brownish; the throat is yellowish white, slightly streaked with brown, and with a blackish line on each side coming from the corner of the lower mandible; the lower portion of the neck and breast is of a dingy, reddish white, more intense, and thickly spotted with blackish brown on the breast and flanks; the belly and vent are almost pure whitish. The wing-coverts and secondaries are blackish brown, margined with dark rusty, and tipped with white; the primaries are dusky brown, paler at the edge. The tail-feathers are dusky, and also margined with deep rusty; the outer bearing a reddish white conic spot, which is merely longitudinal, and narrow on the next. The bill is entirely of a dirty yellowish brown; the feet are dusky brown; the hind nail, though still longer than its toe, is much shorter, and not quite so straight. The figures represent an old male, and a young female.

FLORIDA JAY.—GARRULUS FLORIDANUS.

PLATE XIV. FIG. 1.

Garrulus cyaneus, Vieill. *Nouv. Dict. d'Hist. Nat.* xii. p. 476.—*Garrulus cœrulescens*, Vieill. *Nouv. Dict. d'Hist. Nat.* xii. p. 480.—*Garrulus cœrulescens*, Ord, in *Jour. Ac. Nat. Sc. Phila.* i. p. 346.—*Corvus Floridanus*, Nob. *Syn. Am. Birds*, sp. 64, in *Ann. Lyc. N. Y.* *Id. Cat. Birds U. S.* sp. 64, in *Contr. Macl. Lyc. Phil.*—*Corvus Floridanus*, *Pica glandaria minor*, the little Jay of Florida, Bart. *Tr.* p. 290.—*Pica glandaria cœrulea non cristata*, Bart. *Trav.* p. 172.—Le Geay azurin, and Le Geay gris-bleu, Vieill. *Nouv. Dict. l. c.* *Philadelphia Museum*, No. 1378, male; 1379, female. *My Collection.*

GARRULUS FLORIDANUS.—BONAPARTE.

A SINGLE glance at the plate on which this fine bird is represented, and at that of the preceding, or Steller's jay, will suffice, better than the longest description, to show the error committed by Latham, in quoting, in his recent work, (*General History of Birds*), the name of this species among the synonyms of that dedicated to Steller. In fact, the large crest of that species, (of which the present is altogether destitute,) and its black head; the light brown back, and bluish collar of this—but it is needless to carry the comparison between them any farther; they are too dissimilar to suffer it, and we shall reserve pointing out differences, until required, by closely related species, of which more striking examples will not long be wanting.

Mistakes of this kind are perhaps unavoidable in a compilation of such extent as the work we have mentioned, and if they proceeded from a laudable desire of excluding nominal species, evinced throughout, we should refrain from censure; but when, on the contrary, we find in the same work such repeated instances of an inconsiderate multiplication of species, they cannot be too severely condemned.

Vieillot, in the case of this bird, has fallen into the contrary, and much more common error, of making two species out of

it ; one from personal observation, and the other by compilation. This mistake has already been corrected by Mr Ord, in a valuable paper which he drew up on his return from Florida, where he enjoyed the advantage of studying this species in its native haunts.

“ When we first entered East Florida,” says Mr Ord, “ which was in the beginning of February, we saw none of these birds ; and the first that we noticed were in the vicinity of St Augustine, on the 13th of the above-mentioned month. We afterwards observed them daily in the thickets near the mouth of the St Juan. Hence we conjectured that the species is partially migratory. Their voice is not so agreeable as that of the *Garrulus cristatus*, or crested blue jay of the United States ; they are quarrelsome, active, and noisy, and construct their nests in thickets. Their eggs I have not seen.” “ The blue jay, which is so conspicuous an ornament to the groves and forests of the United States, is also common in Florida. This beautiful and sprightly bird we observed daily, in company with the mocking-bird and the cardinal grosbeak, around the rude habitations of the disheartened inhabitants, as if willing to console them amid those privations which the frequent Indian wars, and the various revolutions which their province has experienced, have compelled them to bear.” The Florida jay, however, is a resident in that country, or only removes from section to section. It is not confined to Florida, where it was first noticed by Bartram, being found also in Louisiana, and in the west extends northward to Kentucky ; but along the Atlantic, not so far. In East Florida it is more abundant, being found at all seasons in low thick covers, clumps, or bushes. They are most easily discovered in the morning about sunrise, on the tops of young live oaks, in the close thickets of which they are found in numbers. Their notes are greatly varied, and in sound have much resemblance to those of the thrush and the blue jay, partaking a little of both. Later in the day it is more difficult to find them, as they are more silent, and not so much on the tree tops as among the bushes,

which are too thickly interwoven with briers and saw-palmettos, to be traversed ; and unless the birds are killed on the spot, which they seldom are when struck with fine shot, it is next to impossible to come at them in such situations. This species, like its relatives, is omnivorous, but being inferior in strength, does not attack large animals. The stomachs of our specimens contained small fragments of shells, sand, and half-digested seeds.

The blue jays, though also found in the same localities, are not so numerous ; they keep more in the woods, and their note is louder.

The Florida jay is eleven and a half inches long, and nearly fourteen in extent ; the bill is one inch and a quarter long, hardly notched, and of a black colour, lighter at tip ; the incumbent setaceous feathers of the base are greyish blue, mixed with a few blackish bristles ; the irides are hazel brown ; the head and neck above, and on the sides, together with the wings and tail, are bright azure ; the front, and a line over the eye, bluish white ; the lores and cheeks of a duller blue, somewhat mixed with black ; the back is yellowish brown, somewhat mixed with blue on the rump, the upper tail-coverts being bright azure ; the inner vanes and tips of the quills are dusky, their shafts, as well as those of the tail-feathers, being black. All the lower parts are of a dirty pale yellowish grey, more intense on the belly, and paler on the throat, which is faintly streaked with cinereous, owing to the base of the plumage appearing from underneath, its feathers having blackish, bristly shafts, some of them without webs. From the cheeks and sides of the neck, the blue colour passes down along the breast, and forms a somewhat obscure collar ; the under wing and under tail-coverts are strongly tinged with blue, which colour is also slightly apparent on the femorals ; the inferior surface of the wings and tail is dark silvery grey ; the base of the plumage is plumbeous ash, blackish on the head ; the wings are four and a half inches long, and reach, when closed, hardly beyond the coverts of the tail, which is five and a half inches

long, extending beyond the wings three and a half; the spurious feather is extremely short; the first primary, (often mistaken for the second,) is as short as the secondaries; the five succeeding are subequal, the third and fourth being rather the longest. The tail is somewhat wedge-shaped, the outer feather being half an inch shorter than the next, and one inch and a half shorter than the middle one. The tarsus is an inch and a quarter long, and black, as well as the toes and nails.

The female is perfectly similar to the male, being but a trifle less in size, and quite as brilliant in plumage.

Two years since it fell to our lot to describe, and apply the name of ultramarine jay, (*Garrulus ultra-marinus*,) to a species found in Mexico, closely resembling this, and to which Mr Swainson, in his *Synopsis of Mexican Birds*, has lately given the name of *Garrulus sordidus*, his specimen being probably a young one. The principal distinctive characters may be found in its larger dimensions, but especially in the shape of its tail, which is perfectly even, and not in the least cuneiform, as it generally is in the jays. The back, though it is also somewhat intermixed with dusky, is much more blue than in our species, and indeed the whole azure colour is somewhat more brilliant and silky; the bluish collar is wanting, and the under wing, but especially the under tail-coverts, are much less tinged with blue. The wings, moreover, are proportionally larger.

NORTHERN THREE-TOED WOODPECKER.—PICUS
TRIDACTYLUS.—PLATE XIV. FIG. 2.

Picus tridactylus, *Linn. Syst. i. p. 177, sp. 21. Gmel. Syst. i. p. 439, sp. 21. Faun. Suec. sp. 103. Act. Holm. 1740, p. 222. Phil. Trans. lxii. p. 388. Scop. Ann. i. sp. 56. Georgi, Reise, p. 165. Borowsk, Nat. ii. p. 138, sp. 8. Lath. Ind. p. 243, sp. 56. Meyer and Wolf, Taschen. Deutsch. Vog. i. p. 125, sp. 8. Temm. Man. Orn. i. p. 401, young. Brehm. Lehr. Eur. Vog. i. p. 142. Ranz. Elem. Orn. ii. p. 184, sp. 9, tab. 7, fig. 4.—*Picus hirsutus*, *Vieill. Ois. Am. Sept. ii. p. 68, pl. 124, adult male.—Picoides, Lacepede.—Dendrocopos tridactylus, Koch, Baierische Zool.—Tridactylia hirsuta, Stephens, in Shaw's Zool. ix. p. 219.—Picus tridactylus anomalus, Mus. Petr. 368.—Picchio a tre dita, Stor. degli Ucc. ii. pl. 180.—Pic tridactyle, ou Picoide, Temm. l. c.—Dreizehiger Specht, Bechst. Nat. Deutschl. ii. p. 1044. Naum. Vog. Nachtr. pl. 41, fig. 81. Meyer and Wolf, Ois. d'Allem. Cah. 26, pl. 4, male; pl. 6, female.—Northern Three-toed Woodpecker, Edwards, pl. 114, male.—Three-toed Woodpecker, Penn. Arct. Zool. sp. 168. Lath. Syn. ii. p. 600, sp. 51, Id. Suppl. p. 112.—Philadelphia Museum, male.—My Collection, male, female, and young.**

APTERNUS ARCTICUS.—SWAINSON.

Picus (apternus) Arcticus, Sw. North. Zool. ii. p. 313.

THIS species is one of those which, from their habitation being in the extreme north, have a wide range round the globe. It is in fact met with throughout northern Asia and Europe, from Kamtschatka to the most eastern coasts of the old continent; and in America, is very common at Hudson's Bay, Severn River, Fort William on Lake Superior, and throughout the north-west, in hilly and wooded tracts. In the United States it is only a rare and occasional winter visitant, never having been received by us, except from the northern territory of the State of Maine. The species, contrary to what is observed of most other Arctic birds, does not appear to extend so far south, comparatively, as in Europe, though it is not improbable that on this continent it may also inhabit some unexplored mountainous districts, resembling the wild regions where only it is found in Europe. In both continents, the

species affects deep forests among mountains, the hilly countries of northern Asia and Europe, and the very lofty chains of central Europe, whose elevation compensates for their more southern latitude. It is exceedingly common in Siberia, is abundant in Norway, Lapland, and Dalecarlia, among the gorges of Switzerland and the Tyrol, especially in forests of pines. It is not uncommon in the Canton of Berne, in the forests near Interlaken, though very rare in Germany, and the more temperate parts of Europe. It is well known to breed even in Switzerland, and deposits, in holes formed in pine trees, four or five eggs, of a brilliant whiteness; its voice and habits are precisely the same as those of the spotted woodpeckers. Its food consists of insects and their larvæ, and eggs, and sometimes seeds and berries. It is easily decoyed by imitating its voice.

This species is eminently distinguished among the North American and European woodpeckers, by having only three toes, the inner hind toe being wanting, besides which it has other striking peculiarities, its bill being remarkably broad, and flattened, and its tarsi covered with feathers half their length: the tongue is, moreover, not cylindrical, but flat and serrated at the point, which conformation we have, however, observed in the three European spotted woodpeckers, and in the American *Picus varius*, *villosus*, *pubescens*, and *querulus*. In all these species the tongue is flat, with the margins projecting each side, and serrated backwards, plain above, convex beneath, and acute at the tip.*

* Mr Swainson has thought the three-toed woodpeckers of sufficient importance to form a subgenus; and I rather think that he will be right in his views. These birds were included by Koch in his genus *Dendrocopus*, of which they possess the general form and colour, but differ chiefly in the structure of the foot. I believe more species will be discovered in the south parts of America, and Mr Swainson, although he does not enter minutely into the distinctions, considers that there are two confounded under the northern three-toed woodpecker. The present bird he denominates *Apternus arcticus*, and retains *tridactylus* for the three-toed woodpecker of Pennant and Edwards, the *Picus tridactylus* of Forster. The chief differences are in the greater size of the former, the difference of marking, and the relative proportion of the wings. The Northern Expedition ob-

Linné, Brisson, and other anterior writers, confounded this northern bird with a tropical species, the southern three-toed woodpecker, *Picus undulatus* of Vieillot, which inhabits Guiana, and, though very rarely, Central America, but never so far north as the United States. It is the southern species of which Brisson has given us the description, while Linné described the present. It is nevertheless probable that he had the other in view when he observes, that in European specimens the crown was yellow, and in the American red, though, as he states, from Hudson's Bay. The latter mistake was corrected by Latham, who, however, continued to consider the southern as no more than a variety, in which he was mistaken, since they are widely distinct; but as he had no opportunity of seeing specimens, he is not to be censured, especially as he directed the attention of naturalists to the subject. The merit of firmly establishing the two species is, we believe, due to Vieillot. Besides several other traits, the northern bird is always to be distinguished in every state of plumage from its southern analogue, by that curious character whence Vieillot took his highly characteristic name, (*Picus hirsutus*, *Pic à pieds vêtus*), the feathered tarsi, a peculiarity which this alone possesses to the same extent. The plumage is an uniform black above in the adult, with the top of the head yellow in the male, while the southern, whose tarsi are naked, is black undulated with white, the male having the sinciput red. It is worthy of remark, that the three-toed group found in arctic and in tropical America, should have no representative in the intermediate countries.

Although these are the only three-toed woodpeckers noted as such in the books, several others are known to exist, some of which, long since discovered, have through inadvertence, or want of proper discrimination, been placed among the four-toed species. The three-toed woodpeckers have been formed

served the first only on the eastern declivities of the Rocky Mountains, where the common species was also procured. This investigation may be worth the while of those persons who have the opportunity.—ED.

into a separate genus, a distinction to which they might indeed be considered entitled, if they all possessed the other characters of the present; but, besides that this character appears to be insulated, and of secondary importance, (since all forms of the bill known among the four-toed species are met with among the three-toed, which ought, therefore, to make as many groups as there are forms, instead of a single one,) the naturalist is perplexed by the anomalous species that inhabit India, of which one has only a stump destitute of nail, and another merely a very small nail without the toe, and, as if nature took delight in such slow and gradual transitions, two others, furnished with both toe and nail, have the toe exceedingly short, and the nail extremely small! This serves to demonstrate that *Picus*, like other natural groups, admits of subdivision. These, however, ought not to be separations; and the genus has been left comparatively untouched by the great innovators of our day, who have only established three genera from it. The first of these, *Colaptes*, of which *P. auratus* of North America may be considered the type, comprises the species that have four toes, and slightly curved bills, forming the passage to *Cuculus*; another, for which the name of *Picus* is retained, includes the four-toed species with straight bills, and the third for the three-toed species indiscriminately. The only foreign three-toed species in our collection, the beautiful *Picus Bengalensis* of authors, (*Picus tiga* of Horsfield,) widely spread through tropical Asia and the adjacent islands, and, though long since known, always ranked as four-toed, has the bill precisely similar to the four-toed species, being even remarkably compressed, and very sharp on the ridge.

The male northern three-toed woodpecker is ten inches long, and sixteen in extent; the bill measures one inch and a quarter, is of a blackish lead colour, bluish white at the base of the lower mandible; it is very broad at base, cuneiform and obtuse at tip, and much depressed throughout, the ridge being very much flattened: both mandibles are perfectly straight; the upper pentagonal, the lower obtusely tri-

gonal ; the tongue is somewhat shorter than that of other species of the genus ; the bristly feathers at the base of the bill are very thick and long, a provision which nature has made for most arctic birds ; in this they measure half an inch, and are blackish, white at base, somewhat mixed with reddish white ; the irides are bluish black ; the whole head and neck above and on the sides, back, rump, scapulars, smaller wing and tail-coverts, constituting the whole upper surface of the bird, of an uniform, deep, glossy black, changing somewhat to green and purple, according to the incidence of light ; the feathers of the front are tipped with white, producing elegant dots of that colour (which perhaps disappear with age) ; the crown of the head is ornamented with a beautiful oblong spot one inch in length, and more than half an inch broad, of a bright silky golden yellow, faintly tinged with orange, and the feathers in this place very fine, and somewhat rigid ; they are black at their base, and marked with white at the limits of the two colours ; the base of the plumage elsewhere is uniformly plumbeous ash : each side, from the corner of the mouth, arises a broad white line, forming a white space before the eye, prolonged on the neck ; beneath this there is a black one, which, passing from the base of the lower mandible, joins the mass of black of the body ; a tuft of setaceous white feathers advances far upon the bill beneath ; the throat, breast, middle of the belly, and tips of the under tail-coverts, are pure white ; the sides of the breast, flanks broadly, and base of the tail-coverts, and even of some of the belly feathers, are thickly waved with lines of black and white, as well as the femoral and short tarsal feathers : in very old birds, as the one represented in the plate, these parts are considerably less undulated, being of a much purer white ; the wings are five inches long, reaching two-thirds the length of the tail ; the spurious feather is exceedingly short, the first primary hardly longer than the seventh ; and the four following subequal and longest ; the smaller wing-coverts, as mentioned, glossy black ; all the other upper coverts, as well as the quills, are of a dull black, the

primaries being somewhat duller ; these are regularly marked on both webs with square white spots, larger on the inner webs, and as they approach the base ; the secondaries are merely spotted on the inner vane, the spots taking the appearance of bands ; the tips of all the quills are unspotted, the lower wing-coverts are waved with black and white, similar to the flanks ; the tail is four inches long, of the shape usual in the woodpeckers, and composed of twelve feathers, of which the four middle, longest, and very robust and acute, are plain deep black, the next on each side is also very acute, and black at base, cream white at the point, obliquely and irregularly tipped with black ; the two next to these are cream white to the tip, banded with black on the inner vane at base, the more exterior being much purer white and somewhat rounded ; the exterior of all is very short and rounded, and banded throughout with black and pure white : the tarsus is seven-eighths of an inch long, feathered in front for nearly half its length, and, with the toes and nails, dark plumbeous ; the nails are much curved and acute, the hind one being the largest.

The above is a minute description of our finest male specimen, with which all those we have examined coincide more or less. By comparing, however, this description with the detailed ones found in some works, we must conclude that the species is subject to variations in size and plumage, which, according to the erroneous impression given by authors, could not be satisfactorily accounted for by difference of sex, age, or locality : thus in some specimens the cervix is described white, or partly whitish, instead of being wholly black ; the back is also said to be waved with white ; which is indeed the case, and with the cervix also, but only in young birds. There is a circumstance, however, that could not be explained by supposing a difference of age, for while some specimens are seen with no appearance of white or yellow on the crown, but having that part, as well as the body, rich shining black, others with a good deal of lemon yellow on that part, are of a duller black, much varied with white. As in other doubtful and in-

tricate cases, these obscurities are dissipated by a close inspection and unprejudiced observation of nature, and we feel much gratification in being enabled to unveil to ornithologists the mystery of these diversities of plumage in this species, by merely pointing out the sexual differences, as well as those originating in the gradual change from youth to maturity in both sexes; which, when understood, will not be found more extraordinary than in other species.

The adult female has never been recognised by any author, nor, hitherto, even by ourselves, having been misled by others in taking the young for her; and this we have only discovered by inspecting a great many specimens. She is precisely similar to the male, even in the minutest particulars, excepting the absence of yellow on the head, this part being of a rich and glossy black.

The young of both sexes are of a dull blackish; the setaceous feathers of the nostrils are greyish, somewhat tinged with rusty; all the feathers of the crown are tipped with white, constituting thick dots on that part, to which they give a silvery appearance; the cheek bands are obscure and much narrower; the cervix is more or less varied with white, and the feathers of the back being banded with white, gives to that part a waved appearance; the under parts are more thickly waved with black: six, instead of four, of the middle tail-feathers, are almost wholly black, the outer of the six having only two or three whitish spots on the outer web. The remaining parts, with due allowance, are similar to the adult.

The young male gradually assumes the yellow, which is at first but little extended, and of a pale lemon colour, through which are yet for some time seen the white dots attributed to the female. She indeed has them very conspicuous in youth, as they are not confounded with any yellow, but loses them entirely as she advances to the adult state.

YOUNG RED-HEADED WOODPECKER.—PICUS ERYTHRO-
CEPHALUS.—PLATE XIV. FIG. 3.

See *Wilson's American Ornithology*, vol. i. p. 142, pl. 9, fig. 1, for the adult.—
Picus erythrocephalus, *Linn. Syst.* i. p. 174, sp. 7. *Mus. Adolph. Frid.* ii. p. 21. *Briss. Orn.* iv. p. 52, sp. 19. pl. 3, fig. 1. *Id.* 8vo, ii. p. 50. *Gmel. Syst.* i. p. 429, sp. 7. *Borowsk, Nat.* ii. p. 136, sp. 4. *Lath. Ind.* p. 227, sp. 9, adult. *Vieill. Ois. Am. Sept.* ii. p. 60, pl. 112, adult; pl. 113, young.—
Picus obscurus, *Gmel. Syst.* i. p. 429. *Lath. Ind.* p. 228, sp. 11, young.—
Picus capite toto rubro, the Red-headed Woodpecker, *Catesby, Car.* i. pl. 20, adult.—
Picus capite colloque rubris, *Klein, Av.* p. 28, sp. 12, adult.—*Picus capite toto rubro*, *Kalm, It.* iii. pl. 43, adult.—*Picchio di testa rossa*, *Storia degli Ucc.* pl. 170, adult.—*Pic noir à domino rouge*, *Buff. Ois.* vii. p. 55, adult.—*Pic de Virginie*, *Buff. Pl. Enl.* 117, adult.—*Pic tricolor*, *Vieill. l. c.* adult and young.—Red-headed woodpecker, *Penn. Arct. Zool.* sp. 160. *Kalm, Trav. (Angl.)* ii. p. 86. *Lath. Synop.* ii. p. 561, adult.—White-rumped woodpecker, *Lath. Syn.* ii. p. 563, sp. 10, young.

MELANERPES ERYTHROCEPHALUS.—SWAINSON.

See vol. i. p. 146, male.

THE state in which the common red-headed woodpecker is here represented, has given rise to a nominal species; and it is in fact so difficult to recognise for that bird, that we have thought proper, after the example of Vieillot, to give an exact figure of it. We feel no diffidence in affirming, that in this, through the exertions of Messrs Rider and Lawson, we have fully succeeded; and it will perhaps be allowed to be the best representation of a bird ever engraved. We have nothing to add to Wilson's excellent account of the manners of this very common species, and, therefore, shall limit ourselves to the description of the young as represented.

The young red-headed woodpecker is nine and a half inches long, and seventeen inches in extent. The bill is short and robust, being but one-eighth more than an inch in length; the upper mandible has the ridge slightly curved; the bill is horn colour, whitish at base beneath; the setaceous feathers cover-

ing the nostrils are very short, and not thick, rufous grey, tipped with black; the whole head, neck, and upper parts of the breast, (which are red in the adult,) are blackish, each feather broadly edged with whitish, giving the throat the appearance of being whitish, streaked with blackish; the auriculars are plain dusky black; from the breast beneath all is dingy white, the feathers of the breast and lower tail-coverts having dusky shafts; the back and scapulars are black, the feathers being margined with whitish grey; the rump and upper tail-coverts pure white; the wings are five inches and a half long; the spurious feather very short, the first primary subequal to the fifth, the second to the fourth, the third being longest; the smaller wing-coverts are uniform with the back; the larger are of a deeper black, and tipped with pure white; the spurious wing is wholly deep black; the under wing-coverts are pure white, blackish along the margin of the wing; the primaries are plain black, tipped and edged externally with whitish; the secondaries are white, shafted with black, and with an acuminate, broad, subterminal band, which, running from one to the other, takes a zigzag appearance; the tail is four inches long, and, like those of all the woodpeckers we have examined, composed of twelve feathers, of which the outer on each side is extremely short and inconspicuous, and pure white, with a black shaft. All the others, which are very acute, longer, and more acuminate, and stiffer as they approach the centre, are black, and, except the two middle ones, slightly whitish each side of the shaft at tip, the outer being also of that colour on its outer margin. The feet are dark plumbeous, the tarsus being seven-eighths of an inch long, and feathered for a short space in front.

The young of both sexes are, no less than the adult, perfectly alike; as they advance in age, the margins of the feathers disappear, and the black becomes deep and glossy, and all the colours much purer; the scarlet of the head comes on very gradually, so that specimens are found with merely a reddish tinge, and generally with a few dots on the hind neck;

it is one of these specimens, with a few streaks of red, that we have selected for the sake of ornamenting the plate, as well as to exemplify the manner in which the change takes place. No such mark appears at first.

In the adult, the whole head, neck, and breast, are bright and deep scarlet, with the feathers black at base; the back, scapulars, and smaller wing-coverts, are rich glossy black; the rump, upper tail-coverts, and from the breast beneath, white, the bottom of the plumage being plumbeous, and the tail-coverts with blackish shafts; the wings and tail are black; the lower wing-coverts pure white, with the margin of the wing deep black; the secondaries are white, shafted to near the tip with black; the last of the primaries being also white at tip, and on the greater part of the base of the outer vane; the small lanceolate outer feather is white, black on the shaft and base of the inner vane; the two next only being tipped with white, the outer of which is also white on the exterior margin.

EVENING GROSBEAK.—FRINGILLA VESPERTINA.

PLATE XV. FIG. 1.

Fringilla vespertina, Cooper, in *Ann. Lyc. New York*, i. p. 220. *Nob. Cat. Birds U.S.* sp. 188, in *Contr. Maccl. Lyc. Phila.* i. p. 21. *Id. Syn. Birds. U.S.* sp. 188, in *Ann. Lyc. N. Y.* ii. p. 113. *Id. Suppl.* in *Zool. Journ. London*, iv. p. 2. *Cabinet of the Lyceum of Nat. Hist. of New York*.—Mr Leadbeater's Collection in London.

COCCOTHTRAUSTES? VESPERTINA.—COOPER.*

Coccothraustes vespertina, *North. Zool.* ii. p. 269.

Few birds could form a more interesting acquisition to the Fauna of any country than this really fine grosbeak. Beauti-

* In another note we remarked, that this genus was supplanted in America by Mr Swainson's genus *Guiraca*. At that time we overlooked the evening grosbeak, which approaches nearer to our idea of the genus *Coccothraustes*, than some of those which have lately been placed within it. And it will remain at present a question whether the present form be retained under that title, and the

ful in plumage, peculiar in its habits, important to systematic writers, it combines advantages of every kind. It was named and first described by Mr Cooper, and little has since been discovered of its history to be added to the information he has collected and given us in the journal above quoted. The species appears to have an extensive range in the northern and north-western parts of this continent, being met with from the extremity of the Michigan Territory to the Rocky Mountains, within the same parallels. It is common about the head of Lake Superior, at Fond du Lac, and near the Athabasca Lake. A few were observed by Mr Schoolcraft, during the first week of April, 1823, about Sault Sainte Marie, Michigan Territory, where they remained but a short time, and have not appeared since; and by Major Delafield, in the month of August of the same year, near the Savannah river, north-west from Lake Superior. They appear to retire during the day to the deep swamps of that lonely region, which are covered with a thick growth of various trees of the coniferous order, and only leave them in small parties at the approach of night. Their note is strange and peculiar; and it is only at twilight that they are heard crying in a singular strain. This mournful sound, uttered at such an unusual hour, strikes the traveller's ear, but the bird itself is seldom seen; though, probably from its unacquaintance with man, it is so remarkably tame and fearless as almost to suffer itself to be caught with the hand.

The specimen of the evening grosbeak presented to the Lyceum of New York, by Mr Schoolcraft, from which Mr Cooper established the species, was thought, until lately, the only one in possession of civilized man; but we have since examined two others shot early in the spring on the Athabasca Lake, near the Rocky Mountains, and preserved among the endless treasures of Mr Leadbeater of London. From the

aberrant species separated, or the reverse. We do not consider that this bird can range with *Guiraca*.—ED.

more perfect of these, our plate, already engraved from Mr Cooper's specimen, has been faithfully coloured; and the subjoined description is carefully drawn up from a perfect specimen now before us, which Mr Leadbeater, with the most obliging liberality, has confided to our charge.

Although we consider the grosbeaks (*Coccothraustes*) as only a subgenus of our great genus *Fringilla*, they may with equal propriety constitute one by themselves; as the insensible degrees by which intermediate species pass from one form into another, (which determined us in considering them as a subgenus, and not a genus,) are equally observable between other groups, though admitted as genera. *Coccothraustes* is as much entitled to be distinguished generically from *Fringilla*, as *Turdus* from *Sylvia*; and at all events, its claim is full as good, and perhaps better, than its near relation, *Pyrrhula*. In the present work, however, we have preferred retaining things as we found them, until we can apply ourselves to the work of a general reform, as announced in the first article of this volume. Though we regard the grosbeaks as a subgenus, others, going to the opposite extreme, have erected them into a separate family, composed of several genera. The evening grosbeak is, however, so precisely similar in form to the hawfinch-type of the group, as to defy the attempts of the most determined innovators to separate them. Its bill is as broad, as high, quite as strong and turgid, with both mandibles equal, the upper depressed and rounded above, and the commissure straight. It conforms even, in a slight degree, in the rhomboidal shape of the ends of the secondaries—a character so conspicuous in its analogue; to which, in the distribution and transitions of its tints, though very different, it also bears a resemblance. It is, however, of the four North American species of its group, the only one so strictly allied, for even the cardinal grosbeak, the most nearly related of these species, on account of its short rounded wings and other minor traits, might be separated, though fortunately it has not as yet, to our knowledge; the others have been already.

The evening grosbeak is eight and a half inches long ; its bill is of a greenish yellow, brighter on the margins, seven-eighths of an inch long, five-eighths broad, the same in height ; the capistrum and lora are black ; the front is widely bright yellow, prolonged in a broad stripe over the eye to the ears ; the hind crown is black, intermixed with yellow, visible only on separating the feathers, but leading to the suspicion that at some period the yellow extends perhaps all over the crown ; the sides and inferior parts of the head, the whole neck, above and beneath, together with the interscapulars and breast, are of a dark olive brown, becoming lighter by degrees ; the scapulars are yellow, slightly tinged with greenish ; the back, rump, with the whole lateral and inferior surface, including the under wing and under tail-coverts, yellow, purer on the rump, and somewhat tinged with olive-brown on the belly. Although these colours are all very pure, they are not definitely separated, but pass very insensibly into each other ; thus the black of the crown passes into the dark brown of the neck, which, becoming lighter by degrees, is blended with the yellow of the back. The same thing takes place beneath, where the olive-brown of the breast passes by the nicest gradations into the yellow of the posterior parts ; the whole base of the plumage is pale-bluish plumbeous, white before the tips of the feathers ; the femorals are black, skirted with yellow ; the wings are four and a half inches long ; the smaller, middling, and exterior larger wing-coverts, are deep black, as well as the spurious wing ; those nearest the body are white, black at the origin only ; the quills are deep black, the three outer being subequal and longest, attenuated on their outer web at the point, and inconspicuously tipped with whitish ; the secondaries are marked with white on their inner web, that colour extending more and more as they approach the body, the four or five nearest being entirely pure white, like their immediate coverts, and slightly and inconspicuously edged with yellow externally ; the tail is two and a half inches long, slightly forked, and, as well as its long superior coverts, very deep black ; the outer

feather on each side has, on the inner vane, towards the tip, a large, roundish, white spot, which seems disposed to become obliterated, as it is much more marked on one, than on that of the other side which corresponds to it, and does not exist in all specimens; a similar spot is perceptible on the second tail-feather, where it is, however, nearly obliterated; the feet are flesh colour, the nails blackish, the tarsus measuring three quarters of an inch.

No difference of any consequence is observable between the sexes; though it might be said that the female is a little less in size, and rather duller in plumage.

FEMALE ROSE-BREASTED GROSBEAK.—FRINGILLA
LUDOVICIANA.—PLATE XV. FIG. 2.

See *Rose-breasted Grosbeak*, *Loxia rosea (ludoviciana)* Wils. *Am. Orn.* ii. p. 135, pl. 17, fig. 1, for the male.—*Loxia ludoviciana*, Linn. *Syst.* i. p. 306, sp. 38. *Gmel. Syst.* i. p. 862, sp. 38. *Lath. Ind.* p. 379, sp. 25.—*Fringilla punicea*, *Gmel. Syst.* i. p. 921, sp. 81. *Lath. Ind.* p. 444, sp. 34, adult male.—*Loxia maculata*, *Gmel. Syst.* i. p. 861, sp. 87. *Lath. Ind.* p. 379, sp. 26, young.—*Loxia obscura*, *Gmel. i.* p. 862, sp. 88. *Lath. Ind.* p. 379, sp. 27, female.—*Coccothraustes ludoviciana*, *Briss. Orn.* iii. p. 247, sp. 14, pl. 12, fig. 2. *Id.* 8vo, i. p. 378.—*Coccothraustes rubricollis*, *Vieill. Gal. Ois.* i. part ii. p. 67, pl. 58, (very bad,) and *Dict.*—*Pyrrhula ludoviciana*, *Sabinz, Zool. App. to Frankl. Exp.* p. 675.—*Fringilla ludoviciana*, *Nob. Obs. Nom. Wils. Orn.* sp. 80. *Id. Cat. Birds U. S.* sp. 189. *Id. Syn. Birds U. S.* sp. 189.—*Guiraca ludoviciana*, *Swainson, Syn. Mex. Birds*, sp. 76, in *Phil. Mag. N. S.* i. p. 438.—*Le Rose-gorge*, *Buff. Ois.* iii. p. 460.—*Gros-bec de la Louisiane*, *Buff. Pl. Enl.* 153, fig. 2, male.—*Moineau à poitrine et ventre pourprés*, *Sonn. Buff.* xlviii. p. 240.—*Red-breasted Grosbeak*, *Penn. Arct. Zool.* sp. 212. *Lath. Syn.* iii. p. 126, sp. 24.—*Red-breasted Finch*, *Penn. Arct. Zool.* sp. 275. *Lath. Syn.* iii. p. 272, sp. 30, adult male.—*Dusky Grosbeak*, *Penn. Arct. Zool.* sp. 216. *Lath. Syn.* iii. p. 127, sp. 26, female.—*Spotted Grosbeak*, *Penn. Arct. Zool.* sp. 213. *Lath. Syn.* iii. p. 126, sp. 25, young. *Philadelpia Museum*, No. 5806, male; 5807, female.

GUIRACA LUDOVICIANA.—SWAINSON.

See vol. i. p. 277.

THOUGH several figures have been published of the very showy male rose-breasted grosbeak, the humble plumage of

the female and young has never been represented. It would, however, have better served the purposes of science, if the preference had been given to the latter, though less calculated to attract the eye, inasmuch as striking colours are far less liable to be misunderstood or confounded in the description of species, than dull and blended tints. It will be seen by the synonymy, that nominal species have in fact been introduced into the systems. But if it be less extraordinary that the female and young should have been formed into species, it is certainly unaccountable that the male itself should have been twice described in the same works, once as a finch, and once as a grosbeak. This oversight originated with Pennant, and later compilers have faithfully copied it, though so easy to rectify.

The female rose-breasted grosbeak is eight inches long, and twelve and a half inches in extent. The bill has not the form either of the typical grosbeaks, or of the bullfinches, but is intermediate between them, though more compressed than either. It is three quarters of an inch long, and much higher than broad; instead of being pure white, as that of the male, it is dusky horn colour above, and whitish beneath and on the margins; the irides are hazel brown; the crown is of a blackish-brown, each feather being skirted with lighter olive-brown, and faintly spotted with white on the centre; from the nostrils a broad band passes over the eye, margining the crown to the neck; a brown streak passes through the eye, and the inferior orbit is white; more of the brown arises from the angle of the mouth, spreading on the auriculars; on the upper part of the neck above, the feathers are whitish, edged with pale flaxen, and with a broad, oblong, medial, blackish brown spot at tip; on the remaining part of the neck and interscapulars, this blackish spot is wider, so that the feathers are properly of that colour, broadly edged with pale flaxen; the back and rump, and the upper tail-coverts, are of a lighter brown, with but a few merely indicated and lighter spots; the whole inferior surface of the bird is white, but not very pure; the sides of

the throat are dotted with dark brown, the dots occupying the tips of the feathers; the breast and flanks are somewhat tinged with flaxen, (more dingy on the latter,) and each feather being blackish along the middle at tip, those parts appear streaked with that colour; the middle of the throat, the belly, and under tail-coverts, are unspotted; the base of the plumage is every where plumbeous; the wings are rounded, less than four inches long, entirely dusky brown, somewhat darker on the spurious wing, all the feathers, both quills and coverts, being lighter on their edges; the exterior webs of the middle and larger wing-coverts are whitish at tip, constituting two white bands across the wings; the primaries are whitish at the origin beneath the spurious wing; the secondaries are inconspicuously whitish externally at tip, that nearest the body having a very conspicuous whitish spot; the lower wing-coverts are of a bright buff; and as they are red in the male, afford an excellent essential character for the species; the tail is three inches long, nearly even, and of a paler dusky brown; the two outer feathers are slightly edged internally with whitish, but without the least trace of the large spot so conspicuous in the male, and which is always more or less apparent in the young of that sex; the feet are dusky, the tarsus measuring seven-eighths of an inch.

The young male is at first very similar to the female, and is, even in extreme youth, paler and somewhat more spotted; but a little of the beautiful rose colour, of which the mother is quite destitute, soon begins to make its appearance, principally in small dots on the throat: this colour spreads gradually, and the wings and tail, and soon after the head, blacken, of course presenting as they advance in age a great variety of combinations.

For the description of the beautiful adult male, we shall refer to Wilson, whose description is good, and the figure accurate, but not having stated any particulars about the habits of the species, we shall subjoin the little that is known of them. Though long since recorded to be an inhabitant of Louisiana,

whence it was first received in Europe, recent observations, and the opinion of Wilson, had rendered this doubtful, and it was believed to be altogether an Arctic bird, averse to the warm climates of the Southern States, and hardly ever appearing even in the more temperate. Its recent discovery in Mexico is, therefore, a very interesting and no less remarkable fact, and we may safely conclude that this bird migrates extensively according to season, spending the summer in the north, or in the mountains, and breeding there, and in winter retiring southward, or descending into the plains; being, however, by no means numerous in any known district, or at any season, though perhaps more frequent on the borders of Lake Ontario. Its favourite abode is large forests, where it affects the densest and most gloomy retreats. The nest is placed among the thick foliage of trees, and is constructed of twigs outside, and lined with fine grasses within; the female lays four or five white eggs, spotted with brown. This may also be called an "evening grosbeak," for it also sings during the solemn stillness of night, uttering a clear, mellow, and harmonious note.

We have placed this species in our subgenus *Coccothraustes*. It is probably because he laboured under the mistake that all the grosbeaks removed from *Loxia* had been placed in *Pyrrhula* by Temminck, that Mr Sabine has made it a bullfinch; and in truth the bill very much resembles those of that genus, so that the species is intermediate between the two. Mr Swainson places it, together with the blue grosbeak, *Fringilla* (*Coccothraustes*) *cærulea*, in a new genus which he calls *Guiraca*, but without as yet characterising it. These species have, it is true, a bill somewhat different from that of the typical *Coccothraustes*, (as may be seen by comparing this with the evening grosbeak,) being much less thick and turgid, and higher than broad; the upper mandible being larger than the lower, and covering its margins entirely, compressed on the sides, making the ridge very distinct, (not rounded above,) and curved from the base, but at tip especially; the margins

of both are angular. The representation of the bill in Wilson's plate of the male, is remarkably exact.

FEMALE WHITE-WINGED CROSSBILL.—LOXIA LEUCOPTERA.—PLATE XV. FIG. 3.

See Wilson's *American Ornithology*, iv. p. 48, pl. 31, for the young male.—*Loxia leucoptera*, Gmel. *Syst.* i. p. 844, sp. 12. Vieill. *Gal. Ois.* i. p. 56, pl. 52, young male. Nob. *Obs.* sp. 84. *Id. Cat. and Syn. Birds U. S.* sp. 195.—*Loxia falcirrostra*, Lath. *Ind.* p. 371, sp. 2.—Le Bec-croisé leucoptère, Sonn. *Buff.* xlvii. p. 65. Vieill. *Nouv. Dict. Hist. Nat.* 2d ed. iii. p. 339.—White-winged Crossbill, Lath. *Syn.* iii. p. 108, sp. 2. *Id. Suppl.* p. 148. Dixon, *Voy.* t. 20, p. 358, female. Penn. *Arct. Zool.* ii. sp. 208. My Collection, male, female, young, and middle-aged.

LOXIA LEUCOPTERA.—GMELIN ?

See vol. ii. p. 42.

THE white-winged crossbill, first made known by Latham in his celebrated *Synopsis*, was subsequently introduced on his authority into all the huge compilations of the last century. Wilson gave us the first figure of it, which is that of the male, and promised a representation of the female, together with "such additional facts, relative to its manners, as he might be able to ascertain." It is to fulfil Wilson's engagement that we now give a correct figure of the other sex of this species, which we are also enabled to describe minutely, in all its different states of plumage. This has never before been done, though Vieillot, since Wilson's time, has compiled some account of its habits, described the female, and recently published a bad enough figure of the male in his *Galerie des Oiseaux*.

The English name was bestowed by its discoverer, the scientific was imposed on it by the compiler, Gmelin, who, like the daw in the fable, though with much better success, appropriated to himself the borrowed plumes of others, making Latham's new species his own, by being the first to give them scientific names, which the discoverer himself was afterwards obliged to adopt in his *Index Ornithologicus*. In the present

instance, however, he took the liberty of altering Gmelin's name, most probably with the view of giving one analogous to that of *Loxia curvirostra*, and indicative of the remarkable form of the bill. That character having since been employed as generic, the propriety of Latham's change has ceased to exist, and in fact the advantage is altogether on the side of Gmelin. We have therefore respected the right of priority, even in the case of an usurper.

The female white-winged crossbill is five inches and three quarters long, and nearly nine in extent; the bill is more than five-eighths long, of a dark horn colour, paler on the edges: as is the case in the whole genus, it is very much compressed throughout, but especially at the point, where the edges almost unite into one: both mandibles are curved (the lower one upwards) from the base, the ends crossing each other; the upper has its ridge distinct, and usually crosses to the left in both sexes, and not, as Wilson appears to intimate, generally in one sex only; the lower mandible is considerably shorter; the tongue is short, cartilaginous, and entire; the irides are of a very dark hazel; the small setaceous feathers covering the nostrils, which is one of the characteristics of the genus, are whitish grey; the bottom of the plumage is every where slate colour; the head, and all the upper parts, down to the rump, are of a greyish green, strongly tinged with olive, each feather being marked with black in the centre, giving the plumage a streaked appearance, as represented in the plate; the rump is pure pale lemon yellow, the upper tail-coverts are blackish, margined with whitish olive; the front, and a broad line over and round the eye and bill, are slightly distinguished from the general colour of the head by the want of olivaceous, being greyish white, and as the feathers are very small, appear minutely dotted with black: the curved blackish spot, more apparent in the colours of the male, is slightly indicated on the sides of the head; the sides of the head and neck, the throat, and the breast, are of a greyish white, also streaked with blackish, and somewhat tinged with yellowish on the sides of the

breast; the flanks become of a dingy yellowish grey, and have large, dull, blackish blotches; the belly and vent are of a much purer whitish, and the streaks are on that part long, narrow, and well defined; the under tail-coverts are blackish, with broad white margins; the wings are three inches and a half long, reaching, when closed, to the last of the tail-coverts; the first three primaries are subequal and longest, the fourth being but little shorter, and much longer than the succeeding; the general colour of the wing is black, the smaller coverts each margined with olive; the middle and longer coverts broadly tipped with white, forming a double band across the wings, so conspicuous as to afford the most obvious distinguishing character of the species; all the quills are slightly edged with paler, the tertials being also tipped with white; the under wing-coverts are of a dark silvery, as well as the whole inferior surface of the wing; the tail measures two and a half inches, being as usual composed of twelve feathers; it is black, and deeply emarginate, the feathers acute, and slightly edged with paler; the feet are short, rather robust, and blackish; the tarsus five-eighths of an inch in length, somewhat sharp behind, with its covering entire before; the toes are divided to the base, very short, the middle one considerably the longest, but much less than half an inch long, the lateral one subequal (all these being remarkable characters of the genus); the hind toe long, and stoutest; the nails strong, much curved, and sharp, the hind one the longest, and twice as large as the lateral.

The male described by Latham, Wilson, and Vieillot, as in full plumage, but which, with Temminck, we have good reasons for believing to be between one and two years old, differs from the female in being a trifle larger, and of a crimson red where she is olive grey: the base of the plumage is also considerably darker, approaching to black on the head, which colour predominates in several parts of the plumage, round the eye, on the front, in a broad line curving and widening from the eye each side of the neck, and appearing distinctly

on the back, where it generally forms a kind of band descending from the base of the wing : the rump is of a beautiful rose-red ; the black of the wings and tail is deeper ; the white, pure, and more extended ; the lining of the quills, and especially of the tail-feathers, more conspicuous ; the belly is of a pure whitish, much less streaked, &c.

The bird which, from analogy, we take for the adult male, though we have no positive evidence for deciding whether it is in the passage to, or from, the preceding, differs only in having a light buff orange tinge, where the other has crimson : it agrees with it in all its minute markings, the patch on the sides of the head is better defined, and the wings and tail are of a still deeper black, the edges of the quills and tail-feathers being very conspicuous, and almost pure white. All these facts conspire to favour our opinion. In this state, the bird is rare, as might be expected, and has not before been noticed by any naturalist : we have not represented it, only that we might not multiply figures of the same species.

The very young male before assuming the red, at the age of one year, exactly resembles the female ; being only more greyish, and less tinged with olive, and having the rump greenish yellow, instead of yellow.

The four above-described states of plumage are selected from a number of specimens shot on the same day, and out of the same flock. The changes of these birds must still rank among the unexplained phenomena of natural history. An illustration might be attempted, by supposing a double moult to take place in the birds of this genus, but besides that we ought to be cautious in admitting an hypothesis like this, not founded on observation, it would be entirely untenable in the present instance, from the fact, that all the variations of plumage are found at the same period of the year ; thus proving that age, and, of course, sex, but not season, produce these changes ; and we must provisionally admit, that, contrary to what takes place in all other birds, these (the crossbills), to-

gether with the pine bullfinches, lose, instead of acquiring, brilliancy of colours, as they advance in age.

This species inhabits, during summer, the remotest regions of North America, and it is therefore extraordinary that it should not have been found in the analogous climates of the Old Continent. In this, its range is widely extended, as we can trace it from Labrador, westward to Fort de la Fourche, in latitude 56°, the borders of Peace river, and Montague island on the northwest coast, where it was found by Dixon. Round Hudson's Bay it is common and well known, probably extending far to the northwest, as Mackenzie appears to allude to it when speaking of the only land bird found in the desolate regions he was exploring, which enlivened, with its agreeable notes, the deep and silent forests of those frozen tracts. It is common on the borders of Lake Ontario, and descends in autumn and winter into Canada and the northern and middle States. Its migrations, however, are very irregular. During four years it had escaped my careful researches, and now, while writing, (in the first week of November, 1827,) they are so abundant, that I am able to shoot every day great numbers out of flocks that are continually alighting in a copse of Jersey scrub-pine (*Pinus inops*) even opposite my window. It is proper to mention, that owing perhaps to the inclemency of the season, which has so far been distinguished by rains, early frost, and violent gales of wind, there have been extraordinary flights of winter birds. Many flocks of the purple finch are seen in all directions. The American siskin, (*Fringilla pinus*, Wils.) of which I never saw a living specimen before, covers all the neighbouring pines and its favourite thistles with its innumerable hosts. The snow-bunting (*Emberiza nivalis*) has also made its appearance in New Jersey, though in small parties, after an absence of several years.*

* This is the case also with the common crossbills and European siskin, and has hardly yet met with any reasonable solution. See notes to these birds.
—ED.

The white-winged crossbills generally go to Hudson's Bay on their return from the south, and breed there, none remaining during summer even in the most northern parts of the United States, where they are more properly transient irregular visitors, than even winter residents. They are seldom observed elsewhere than in pine-swamps and forests, feeding almost exclusively on the seeds of these trees, together with a few berries. All the specimens I obtained had their crops filled to excess entirely with the small seeds of *Pinus inops*. They kept in flocks of from twenty to fifty, when alarmed suddenly taking wing all at once, and after a little manœuvring in the air, generally alighting again nearly on the same pines whence they had set out, or adorning the naked branches of some distant, high, and insulated tree. In the countries where they pass the summer, they build their nest on the limb of a pine, towards the centre; it is composed of grasses and earth, and lined internally with feathers. The female lays five eggs, which are white, spotted with yellowish. The young leave their nest in June, and are soon able to join the parents in their autumnal migration.

In the northern countries, where these birds are very numerous, when a deep snow has covered the ground, they appear to lose all sense of danger, and by spreading some favourite food, may be knocked down with sticks, or even caught by the hand, while busily engaged in feeding. Their manners are, in other respects, very similar to those of the common crossbill, as described by Wilson, and they are said also to partake of the fondness for saline substances so remarkable in that species.

FEMALE INDIGO FINCH.—FRINGILLA CYANEA.

PLATE XV. FIG. 4.

See *Wilson's American Ornithology*, i. p. 100, pl. 6, fig. 5, for the male.—*Tanagra cyanea*, *Linn. Syst.* i. p. 315, sp. 6, adult male in full plumage.—*Emberiza cyanea*, *Gmel. Syst.* i. p. 876, sp. 54. *Lath. Ind.* p. 415, sp. 60.—*Emberiza cyanella*, *Sparm. Mus. Carls.* ii. pl. 42, 43. *Gmel. Syst.* i. p. 887, sp. 74.—*Emberiza cœrulea*, *Gmel. Syst.* i. p. 876. *Lath. Ind.* p. 415, sp. 59, male in moult.—*Tanagra cœrulea*? *Gmel. Syst.* i. p. 891, sp. 27. *Lath. Ind.* p. 427, sp. 27, adult male.—*Tanagra Carolinensis cœrulea*, *Briss. Av.* iii. p. 13, sp. 6, adult male in full dress.—*Emberiza Canadensis cœrulea*, *Briss. Av.* iii. p. 298, sp. 12, pl. 14, fig. 2, male moulting.—*Passerina cyanea*, *Vieill. Nouv. Dict. Hist. Nat.*—*Fringilla cyanea*, *Nob. Obs.* sp. 112. *Id. Cat. and Synop. Birds U. S.* sp. 164.—*Linaria cyanea*, *Bartram, Trav.* p. 296.—*Linaria cœrulea*, the Blue Linnet, *Catesby, Carolina*, i. p. 45, pl. 45.—*Le ministre*, *Buff. Ois.* iv. p. 86.—*L'azuroux*, *Buff. Ois.* iv. p. 369, male moulting.—*Passe-bleu*? *Buff. Ois.* iii. p. 495, adult male in full plumage.—*Moineau bleu de Cayenne*? *Buff. Pl. Enl.* 203, fig. 2, adult male in full dress.—Blue Linnet, *Edwards, Av.* iv. p. 132, pl. 273, lower figure.—Indigo Bunting, *Penn. Arct. Zool.* ii. sp. 235. *Lath. Syn.* iv. p. 205, sp. 53.—Blue Bunting, *Penn. Arct. Zool.* ii. sp. 234. *Latham, Syn.* iii. p. 205, sp. 52, male moulting.—Blue Tanager? *Lath. Syn.* iii. p. 234, sp. 28. *Philadelphia Museum*, No. 6002, male; 6003, female.

SPIZA CYANEA.—BONAPARTE.

Male, see vol. i. p. 100, and note to *F. amœna* of present volume.

THE remarkable disparity existing between the plumage of the different sexes of the common indigo bird, renders it almost indispensably requisite that the female, unaccountably neglected by Wilson, as he generally granted this distinction in similar, and often in less important cases, should be figured in this work. Hardly any North American bird more absolutely stands in need of being thus illustrated, than the beautiful finch which is now the subject of our consideration. It could scarcely be expected that the student should easily recognise the brilliant indigo bird of Wilson's first volume, in the humble garb in which it is represented in the annexed plate. But, however simple in its appearance, the plumage of

the female is far more interesting and important than that of the male, as it belongs equally to the young, and to the adult male after the autumnal moult, and previous to the change which ensues in the spring,—a large proportion of the life of the bird.

The importance of a knowledge of these changes will also be duly estimated on recurring to the copious synonymy at the head of our article, by which it will be seen that several nominal species have been made by naturalists who chanced to describe this bird during its transitions from one state to another. Errors of this kind too frequently disfigure the fair pages of zoology, owing to the ridiculous ambition of those pseudonaturalists, who, without taking the trouble to make investigations, for which indeed they are perhaps incompetent, glory in proclaiming a newspecies established on a single individual, and merely on account of a spot, or some such trifling particular ! The leading systematists who have enlarged the boundaries of our science, have too readily admitted such species, partly compelled to it perhaps by the deficiency of settled principles. But the more extensive and accurate knowledge which ornithologists have acquired within a few years relative to the changes that birds undergo, will render them more cautious, in proportion as the scientific world will be less disposed to excuse them for errors arising from this source. Linné may be profitably resorted to as a model of accuracy in this respect, his profound sagacity leading him in many instances to reject species which had received the sanction even of the experienced Brisson. Unfortunately Gmelin, who pursued a practice directly the opposite, and compiled with a careless and indiscriminating hand, has been the oracle of zoologists for twenty years. The thirteenth edition of the *Systema Naturæ* undoubtedly retarded the advancement of knowledge instead of promoting it ; and if Latham had erected his ornithological edifice on the chaste and durable Linnean basis, the superstructure would have been far more elegant. But he first misled Gmelin, and afterwards suffered himself to be misled by him, and was

therefore necessarily betrayed into numerous errors, although he at the same time perceived and corrected many others of his predecessor. We shall not enumerate the nominal species authorized by their works in relation to the present bird, since they may be ascertained by consulting our list of synonyms. On comparing this list with that furnished by Wilson, it will be seen that the latter is very incomplete. Indeed, as regards synonymy, Wilson's work is not a little deficient; notwithstanding which, however, it will be perpetuated as a monument of original and faithful observation of nature, when piles of pedantic compilations shall be forgotten.

We refer our readers entirely to Wilson for the history of this very social little bird, only reserving to ourselves the task of assigning its true place in the system. As we have already mentioned in our "Observations," he was the first who placed it in the genus *Fringilla*, (to which it properly belongs,) after it had been transferred from *Tanagra* to *Emberiza* by former writers, some of whom had even described it under both in one and the same work. But although Wilson referred this bird to its proper genus, yet he unaccountably permitted its closely allied species, the *Fringilla ciris*, to retain its station in *Emberiza*, being under the erroneous impression that a large bill was characteristic of that genus. This mistake, however, is excusable when we consider that almost all the North American birds which he found placed in it, through the negligence or ignorance of his predecessors, are in fact distinguished by large bills.

The transfer of this species to the genus *Fringilla*, renders a change necessary in the name of *Loxia cyanea* of Linné, an African bird, now a *Fringilla* of the subgenus *Coccothraustes*. The American bird belongs to *Spiza*, and, together with the *Fringilla ciris* and the beautiful *Fringilla amœna*, it may form a peculiar group, allied to *Fringilla*, *Emberiza*, and *Tanagra*, but manifestly nearest the former.

The adult male, in full plumage, having been described by Wilson, may be omitted here. The female measures four

inches and three quarters in length, and nearly seven in extent. The bill is small, compressed, and less than half an inch long, is blackish above, and pale horn colour beneath; the irides are dark brown; above she is uniformly of a somewhat glossy drab; between the bill and eyes, and on the cheeks, throat, and all the inferior parts, of a reddish clay colour, much paler on the belly, dingy on the breast, and strongly inclining to drab on the flanks, blending into the colour of the back, the shafts of the feathers being darker, giving somewhat of a streaked appearance; the whole base of the plumage is lead colour; the wings and tail are of a darker and less glossy brown, each feather being edged with lighter, more extended on the secondaries, and especially the wing-coverts; the wings are two inches and a half long, not reaching, when folded, beyond the tail-coverts; the first primary is subequal to the fourth, the second and third being longest; the three outer, besides the first, are greatly attenuated on the outer web, half an inch from the point, where it is extremely narrow; the tail is two inches in length, and but slightly emarginated; the feet are dusky, the tarsus measuring three-quarters of an inch.

The male, after his autumnal moult, exhibits pretty much the same dress, except being more or less tinged with bluish. We shall here observe, that we do not believe that the individual kept by Wilson in a cage through the winter, in which the gay plumage did not return for more than two months, formed an exception to the general law, as he supposed. We have no doubt that this circumstance is characteristic of the species in its wild state.

The young strongly resemble the female; the drab colour is, however, much less pure and glossy, being somewhat intermixed with dusky olive, owing to the centre of the feathers being of the latter hue. Consequently, during the progress from youth to adolescence, and even during the two periodical changes, the plumage of this bird is more or less intermixed with drab, blue, and white, according to the stage of the moulting process, some being beautifully and regularly spotted with

large masses of those colours symmetrically disposed. In one of these males, but little advanced in its changes, we readily recognise the *Emberiza cærulea* of authors, *Azuroux* of Buffon, &c. ; and in another, which has made farther progress towards the perfect state, the shoulders only retaining the ferruginous tinge, we can trace the *Emberiza cyanella* of Sparmann.

PALLAS' DIPPER.—CINCLUS PALLASII.

PLATE XVI. FIG. 1.

Cinclus Pallasii, *Temm. Man. Orn.* i. p. 177. *Nob. Suppl. Gen. Am. Birds*, sp. 94, bis, in *Zool. Journ. London*, iv. p. 4. *Id. in Ann. Lyc. New York*, ii. p. 438. —*Cinclus Mexicanus*, *Swainson, Syn. Birds of Mexico*, sp. 27, in *Phil. Mag. New Series*, i. p. 368.—Collection of Mr Leadbeater, in London.

CINCLUS AMERICANUS.—RICHARDSON and SWAINSON.*

Cinclus Americanus, *North. Zool.* ii. p. 173.

THE recent discovery of the genus *Cinclus* in America, furnishes an interesting fact in the history of the geographical

* The Prince of Musignano has considered this identical with the *C. Pallasii* of Temminck ; and Mr Swainson, from specimens procured by Mr Drummond, near the sources of the Athabasca river, and by Mr Bullock in Mexico, has judged them to be distinct. As far as figures and descriptions can be taken as criterions of species, I should consider that of *Pallas* different, and perhaps the analogue in its own country to that of America. There is great similarity in the few birds that compose this genus, and their locality renders the possession and comparison of them difficult, and it is probable that in three or four will be comprised the whole of the nearly nominal species at present recorded. The various generic names that have been given to these birds, with the changes of place in the different systems, at once pronounce it a form of no ordinary interest ; and there is perhaps none that shows so much combination between the truly aquatic birds and those of the incessores. The peculiar form is familiar to most persons at all conversant with birds, and has been detailed in the description ; the habits, however, are not so easily observed. The present remarks will be confined to the species of Great Britain, which, I believe, may stand as typical of the genus.

The common *water crow*, or *pyet*, is abundant on most of the more Alpine and rugged streams of Scotland and north of England, enlivening the pic-

distribution of birds, this genus being one of the twenty-five European, enumerated in our *Observations*, as not known to

turesque and sometimes solitary scenery by its clean and cheerful appearance, or associating more sedate recollections with the low and pensive melody of its song. They live generally in pairs, keeping entirely to the line of the brook; and, in their flight, fly directly up or down, with a rapid motion of the wings, uttering a single monotonous alarm note, and when about to alight, fall, or splash as it were, in the stream, and swim to shore. Previous to the season of incubation, they become more noisy. The nest is formed exactly like that of the common wren, with a single entrance, and is composed of the ordinary mosses found near the stream, without much lining. It is generally placed under a projecting rock, a few yards above the water, and often where a fall rushes over, in which situation the parent birds must dash through it to gain the nest, which they do with apparent facility, and even seem to enjoy it. At night they roost in similar situations, perched, with the head under the wing, on some little projection, often so much leaning as to appear hanging with the back downwards. I recollect a bridge over a rapid stream, which used to be a favourite nightly retreat, under the arch; I have there seen four at a time sitting asleep in this manner, and used to take them with a light. Before settling for their nightly rest, they would sport in the pool beneath, chasing each other with their shrill and rapid cry, and at last suddenly mount to their perch; when disturbed, they would return again in five minutes. During winter, they migrate to the lower streams;—flowing into the Annan, in Dumfriesshire, there are many Alpine tributary rivulets where these birds are abundant in summer; during winter they remove almost entirely to the latter, where they find a more abundant supply of food, and their aquatic powers are more easily observed. On every reach one or two may be seen perched upon some projecting stone or stick, or watching by the very edge of the ice, whence they drop at once on their prey, consisting now almost entirely of the smaller fishes; when successful, they return to the edge and devour the spoil. They are most active in their motions during this occupation, and dive and return with such rapidity, as to seem constantly dipping and rising, or as perhaps better expressed by a quaint poet, it

“ Comes and goes so quickly and so oft,
As seems at once both under and aloft.”

In milder weather, when the river was less choaked with ice, I have seen them swimming and diving in the centre of the pools, and so expertly, that I have mistaken and followed them for the little grebe. But in all their activity, I have never been able to see them walk upon the bottom, where the depth exceeded a few inches, and I believe it is contrary to the habit of any aquatic bird; the motion has been in all cases, like all others, performed by the wings.

The species of the genus at present stand nominally as follows: The common

inhabit this continent. A specimen from the northern countries, communicated by Mr Leadbeater, first enabled us to introduce it into the American Fauna; and, almost simultaneously, Mr Swainson, in his Synopsis of the birds discovered in Mexico by Mr Bullock, announced it as occurring in that country, but in no other part, as he thought, of America. Judging from his short description, (and the species does not admit of a long one,) we have no hesitation in affirming, that both Mr Swainson's, and that described by Temminck, and supposed to have been found by Pallas in the Crimea, are identical with ours; notwithstanding the localities are so widely distant from each other, as well as from that whence ours comes, which, however, it will be perceived, is intermediate between them.

It has been frequently remarked by us, (and the fact is now well established,) that many birds of Mexico, entirely unknown in the Atlantic territories of the United States, are met with in the interior, and especially along the range of the Rocky Mountains, at considerably higher latitudes. But it was not to be expected that a Mexican species should extend so far north as the Athabasca Lake, where our specimen was procured. The circumstance is, however, the less surprising in birds of this genus, as their peculiar habits will only allow them to live in certain districts. The case is similar with the dipper of the old continent, which, though widely dispersed, is only seen in mountainous and rocky countries. Though we do not see any improbability in the American species inhabiting the eastern Asiatic shore, we prefer believing that the specimens on which Temminck established the species, and

European *Cinclus aquaticus*, *C. Pallasii*, Temm., *C. Americanus*, Swain., *C. Asiaticus*, ? from India, and the *C. septentrionalis* and *melanogaster* of Brehm, mentioned by our author.

Mr Gould has figured a bird, in his beautiful illustrations of Himalaya, under *C. Pallasii*, which is decidedly different from the American; but I do not see any proof why it should be called *C. Pallasii*.—ED.

whose supposed native place was the Crimea, were in fact American. The two species are so much alike in size, shape, and even colour, as to defy the attempts of the most determined system-maker to separate them into different groups.

The single species, of which the genus *Cinclus* had hitherto consisted, was placed in *Sturnus* by Linné; and by Scopoli, with much more propriety, in *Motacilla*. Latham referred it to *Turdus*. Brisson, mistaking for affinity the strong and curious analogy which it bears to the waders, considered it as belonging to the genus *Tringa*, (sandpipers.) Bechstein, Illiger, Cuvier, and all the best modern authorities, have regarded it as the type of a natural genus, for which they have unanimously retained the name of *Cinclus*, given by Bechstein, Vieillot alone dissenting, and calling it *Hydrobata*. This highly characteristic name, notwithstanding its close resemblance in sound and derivation to one already employed by Illiger, as the name of a family, appears to be a great favourite with recent ornithologists, as they have applied it successively to several different genera, and Temminck has lately attempted to impose it on the genus of ducks which I had named *Fuligula*. In my system, the genus *Cinclus* must take its place in the family *Canori*, between the genera *Turdus* and *Myiothera*.

The dippers, or water ousel, are well distinguished by their peculiar shaped bill, which is compressed-subulate, slightly bent upwards, notched, and with its edges bent in, and finely denticulated from the middle; but more especially, by their long, stout, perfectly smooth tarsi, with the articulation exposed, a character which is proper to the order of waders, of which they have also the habits, nay, are still more aquatic than any of them. Their plumage also being thick, compact, and oily, is impermeable to water, as much so as that of the most decidedly aquatic web-footed birds; for, when dipped into it, that fluid runs and drops from the surface. Their head is flat, with the forehead low and narrow; the neck is stout; the body short and compact; the nostrils basal, concave, lon-

gitudinal, half covered by a membrane ; tongue cartilaginous and bifid at tip. Their wings are short and rounded, furnished with a very short spurious feather, and having the third and fourth primaries longest ; the tail short, even, and composed of wide feathers ; the nails large and robust ; the lateral toes are subequal, the outer united at base to the middle one, the hind toe being short and robust. The female is similar to the male in colour, and the young only more tinged with reddish. They moult but once in the year.

These wild and solitary birds are only met with singly, or in pairs, in the neighbourhood of clear and swift-running mountain streams, whose bed is covered with pebbles, and strewn with stones and fragments of rock. They are remarkably shy and cautious, never alight on branches, but keep always on the border of the stream, perched, in an attitude peculiar to themselves, on some stone or rock projecting over the water, attentively watching for their prey. Thence they repeatedly plunge to the bottom, and remain long submerged, searching for fry, crustacea, and the other small aquatic animals that constitute their food. They are also very destructive to musquitoes, and other dipterous insects, and their aquatic larvæ, devouring them beneath the surface. They never avoid water, nor hesitate in the least to enter it, and even precipitate themselves without danger amidst the falls and eddies of cataracts. Their habits are, in fact, so decidedly aquatic, that water may be called their proper element, although systematically they belong to the true land birds. The web-footed tribes swim and dive ; the long-legged birds wade as long as the water does not touch their feathers ; the dippers alone possess the faculty of walking at ease on the bottom, as others do on dry land, crossing in this manner from one shore to the other, under water. They may be often seen gradually advancing from the shallows, penetrating deeper and deeper, and, careless of losing their depth, walking with great facility on the gravel against the current. As soon as the water is deep enough for them to plunge, their wings are opened,

dropped, and agitated somewhat convulsively, and, with the head stretched horizontally, as if flying, they descend to the bottom, where they course up and down in search of food. As long as the eye can follow them, they appear, while in the water, covered with bubbles of air, rapidly emanating from their bodies, as is observed in some coleopterous insects.

The dippers run very fast: their flight is direct, and swift as an arrow, just skimming the surface, precisely in the manner of the kingfisher. They often plunge under at once, without alighting, reappearing at a distance. When on their favourite rocks, these birds are constantly dipping in the water, at the same time flirting their erected tail. While on the wing, they utter a feeble cry, their voice being weak and shrill, but somewhat varied; and they sing from their perch, not loud, but sweetly, even in the depth of winter. Early in the spring, they begin to utter clear and distinct notes, and are among the first to cheer the lonely and romantic haunts which they frequent, with their simple melody.

These birds, like others that live about the water, pair early, and have two broods in the season. The young can leave their nest before being full fledged; and, at the approach of danger, drop from the height where it is generally placed, into the water. In order that this may be done, they build in some place overhanging the water, the ledge of a rock, or the steep bank of a rivulet; or, sometimes, in inhabited countries, take advantage of mills, bridges, or other works of man. The nest is large, composed of moss, and vaulted above; the eggs are from four to six, and of a milky white. Though very carefully hid, it may be easily discovered by the incessant chirping of the young.

Having seen nothing but the dried skin of the American dipper, and being utterly unacquainted with its habits, we have been describing as common to the genus, those of the European species, which are well known, and which we have stopped to watch and admire among the precipices of the Alps and Apennines, where it struggles with the steepest and most

noisy cascades, and the wildest torrents. The exceedingly great similarity of form in the two species, strongly warrants the belief of equal similarity in habits. The more uniform and cinereous hue of the American, the want of reddish, but especially the striking absence of the white on the throat and breast, are the sole, but sufficient marks of difference between the two species.

Pallas' dipper is longer than the common species, measuring eight and a half inches. The bill is perfectly similar, and three quarters of an inch long, blackish, paler beneath and on the edges. The whole bird, without any exception, is of a dark greyish slate colour, with the base of the plumage somewhat lighter; at the superior orbit is a slight indication of whitish. The uniform general colour is somewhat darker on the head, and a shade lighter beneath. The wings are three and a half inches long, as in the genus; the coverts and tertials slightly tipped with dingy whitish; the primaries incline somewhat to brown; the tail measures one inch and a half, and is perfectly even. The feet are of a flesh colour, and the nails dusky white; the tarsus is precisely one inch long.

If we could rely on Brehm, four species of this genus exist, which are all found in the old continent. Two are new ones, proposed by himself, under the names of *Cinclus septentrionalis*, and *Cinclus melanogaster*. The latter, according to him, is a Siberian species, appearing occasionally on the northern coast of European Russia, in winter, and is, perhaps, a genuine species, easily distinguished from the *Cinclus aquaticus*, by having but ten feathers in the tail, whilst all others have twelve, in addition to its smaller size, darker colour, and dingy throat; but the former can hardly be regarded even as a northern variety produced by climate. Mr Brehm is probably quite correct in observing, that both his new species are perfectly similar to the old one.

BOHEMIAN WAXWING.—BOMBYCILLA GARRULA.

PLATE XVI. FIG. 2.

Ampelis garrulus, *Linn. Syst.* i. p. 297, sp. 1. *Gmel. Syst.* i. p. 838, sp. 1. *Lath. Ind.* p. 363, sp. 1. *Muller*, p. 30. *Kram. El.* p. 363, sp. 1. *Borrowsk. Nat.* iii. p. 171, sp. 68. *Meyer and Wolf, Taschen. Deutsch.* i. p. 204.—*Lanius garrulus*, *Faun. Suec.* ii. sp. 82. *Scop. Ann.* i. sp. 20. *Brunn.* sp. 25, 26.—*Bombyciphora poliocelia*, *Meyer, Vog. Liv. and Esthl.* p. 104.—*Bombycivora garrula*, *Temm. Man. Orn.* i. p. 124. *Selby, Ill. Br. Orn.* i. p. 87, pl. 34.—*Bombyciphora garrula*, *Brehm, Lehr. Eur. Vog.* ii. p. 980.—*Bombycilla garrula*, *Vieill. Nouv. Dict. Nob. Suppl. Syn. Am. Birds in Zool. Journ. London*, iv. p. 3, sp. 65, bis. *Ranz. Elem. Orn.* iv. p. 136, sp. 1.—*Bombycilla Bohemica*, *Steph. Contin. Shaw's Zool.* x. p. 421.—*Garrulus*, *Gesn. Av.* p. 703. *Aldr. Orn.* i. p. 796, pl. 798. *Mus.* p. 674, pl. 675. *Raii Syn.* p. 85, A. *Will. Orn.* p. 90, pl. 20. *Alb. Av.* ii. p. 25, pl. 26.—*Turdus cristatus*, *Wirsing, Vog.* pl. 4. *Frisch*, pl. 32, fig. 1, male. *Klein. Stemm.* p. 11, p. 13, fig. 5, a—c.—*Turdus Bombycilla Bohemica*, *Briss. Orn.* ii. p. 333, sp. 63. *Id.* Svo, i. p. 250.—*Garrulo di Boemia*, *St degli Ucc.* ii. pl. 160.—*Le Jaseur*, *Buff. Ois.* iii. p. 429, pl. 26. *Le Vaill. Ois. Para.* i. p. 137, pl. 49.—*Le Jaseur de Bohême*, *Buff. Pl. Enl.* 261. *Cuv. Règne Anim.* i. p. 349.—*Europaischer Seidenschwanz*, *Bechst. Nat. Deutschl.* iii. p. 410, pl. 34, fig. 1.—*Rothlichgraver*, *Seidenschwanz*, *Naum. Vog.* pl. 32, fig. 66. *Meyer and Wolf, Ois. d'Allem. Livr.* 22, pl. 6, fig. 1, male; fig. 2, female.—*Silk-tail*, *Ray, Syn.* p. 85, A. *Phil. Trans.* xv. p. 1165, pl. 1, fig. 9.—*Bohemian Chatterer*, *Penn. Brit. Zool.* sp. 112, pl. 48. *Id.* fol. 7, pl. 1, C. *Lath. Syn.* iii. p. 91, sp. 1. *Ubersetz*, iii. p. 86, sp. 1. *Bell, Travels*, i. p. 98. *Flor. Scot.* i. sp. 92. *Mont. Orn. Dict.* *Lewin, Brit. Birds*, i. pl. 2. *Bewick, Br. Birds.* *Donovan, Br. Birds*, i. pl. 11. *Pult. Cat. Dorsetsh.* p. 11. *My Collection.*

BOMBYCILLA GARRULA.—BONAPARTE

Bombycilla garrula, *North. Zool.* ii. p. 237.

IF the absurd theory advanced by Buffon, that European animals degenerate, or become more or less changed, in other climates, needed in our time any additional refutation, the discovery of this bird in the north-western territory, near the Rocky Mountains, would afford it. By appearing in its full size and perfection, exactly similar to the European individuals of its species, it would vindicate its smaller relation, the com-

mon and familiar cedar bird, from the reproach of degeneracy. But with the more enlightened opinions that now prevail, its occurrence in that unexplored portion of the globe is important, chiefly as tending to solve the problem of the place of abode of this mysterious wanderer; especially as, by a singular coincidence, whilst we were proclaiming this species as American, it was received by Temminck from Japan, together with a new species, the third known of the genus, which he has caused to be figured and distinguished by the appropriate name of *Bombycilla phœnicoptera*, Boiè. Besides the red band across the wing, whence its name is derived, the length of its crest, adorned with black feathers, and the uniform absence, in all states, of the corneous appendages of the wings, this new species, resembling more in size and shape the Carolina wax-wing, (cedar bird,) than the present, is eminently distinguished from both by wanting the small, closely-set feathers covering the nostrils, hitherto assigned as one of the characters of the genus. This example evinces the insufficiency of that character, though Illiger considered it of such importance as to induce him to unite in his great genus *Corvus*, (comprehending this, as well as several other distinct groups,) all the species possessing it. It shows, especially, how erroneous it is to form two separate families for the allied genera with covered or naked nostrils. In fact, the genus as it now stands, is, not the less for this aberration, an exceedingly natural one, though the two species that are now known to inhabit America, are still more allied to each other than either of them to the Japanese, the present (Bohemian) differing chiefly by its larger size, mahogany-brown tail-coverts, and cinereous belly, the first being white, and the second yellowish, in the cedar-bird, which also wants the yellow and white markings on the wing. Of the three species now comprehended in the genus, one is peculiar to America, a second to eastern Asia, and the present common to all the Arctic world.

This small but natural group, at one time placed by Linné in the carnivorous genus *Lanius*, notwithstanding its exclu-

sively frugivorous habits, was finally restored by him to *Ampelis*, in which he was followed by Latham. Brisson placed it in *Turdus*, and Illiger in *Corvus*. Ornithologists now concur in regarding it as a genus, disagreeing only as to the name, some calling it *Bombyciphora*, others *Bombycivora*, though they all appear to have lately united in favour of the more elegant and prior termination of *Bombycilla*.

The waxwings, which we place in our family *Sericati*, having no other representative in Europe or North America, are easily recognised by their short, turgid bill, trigonal at base, somewhat compressed and curved at tip, where both mandibles are strongly notched; their short feet, and rather long subacute wings. But their most curious trait consists in the small, flat, oblong appendages, resembling in colour and substance red sealing-wax, found at the tips of the secondaries in the adult. These appendages are merely the coloured corneous prolongation of the shafts beyond the webs of the feathers. The new species from Japan is, as we have mentioned, at all times without them, as well as the young of the two others. The plumage of all is of a remarkably fine and silky texture, lying extremely close; and they are all largely and pointedly crested, the sexes hardly differing in this respect.

The waxwings live in numerous flocks, keeping by pairs only in the breeding season; and so social is their disposition, that, as soon as the young are able to fly, they collect in large bands from the whole neighbourhood. They perform extensive journeys, and are great and irregular wanderers. Far from being shy, they are simple and easily tamed, but generally soon die in confinement. Their food consists chiefly of juicy fruits, on which they fatten, but to the great detriment of the orchard, where they commit extensive ravages. When fruits are scarce, they seize upon insects, catching them dexterously in the same manner as their distant relatives the flycatchers. No name could be more inappropriate for these birds than that of chatterers, as there are few less noisy, and they

might even be called mute with much better reason. They build in trees, and lay, twice in a year, about five eggs.

Whence does the Bohemian waxwing come at the long and irregular periods of its migrations? Whither does it retire to pass its existence and give birth to its progeny? These are circumstances involved in darkness, and which it has not been given to any naturalist to ascertain. It has been stated, and with much appearance of probability, that these birds retire during summer within the arctic circle; but the fact is otherwise, naturalists who have explored these regions, asserting that they are rarer and more accidental there than in temperate climates. It seems probable that their chief place of abode is in the oriental parts of the old continent, and, if we may hazard an opinion, we should not be surprised if the extensive and elevated table land of Central Asia were found to be their principal rendezvous, whence, like the Tartars in former times, they make their irregular excursions.

As we can only arrive at the truth in this matter by observing facts, and collecting localities, we shall endeavour to do this with the greatest accuracy. In northern Russia, and the extreme north of Norway, they are seen in great numbers every winter, being observed there earlier than in temperate countries. In northern Asia and eastern Europe their migrations are tolerably regular; very numerous flocks generally pass through Scania in November, and are again seen on their return in the spring. But they appear only at very remote and irregular periods, and merely as occasional and rare visitants in western, southern, or even central and northern Europe, and then only in the coldest months of the most severe winters. Notwithstanding that they at times invade peculiar districts in vast numbers, so remarkable is the appearance of these winged strangers then considered, that we find it placed upon record. However extraordinary it may seem to those who live in this enlightened age and country, that the unusual appearance of "cedar-birds of a large kind" should strike terror into the

souls of men, such, notwithstanding, was the effect in more ignorant times. They have been looked upon as the precursors of war, pestilence, and other public calamities. One of their irruptions was experienced in Italy in 1571, when flocks of hundreds were seen flying about in the north of that country in the month of December, and were easily caught. A similar visit had taken place in 1530 in February, marking the epoch when Charles V. caused himself to be crowned at Bologna. Aldrovandi, from whom we learn the above particulars, also informs us that large flocks of them appeared in 1551, when it was remarked, that, though they spread in numbers through the Modenese, the Plaisantine, and other parts of Italy, they carefully avoided entering the Ferrarese, as if to escape the dreadful earthquake that was felt soon after, causing the very birds to turn their flight. In 1552, Gesner informs us, they appeared along the Rhine, near Mentz in Germany, in such numbers as to obscure the sun. They have, however, of late years, in Italy and Germany, and in France especially, at all times, been extremely rare, being seen only in small companies or singly, appearing as if they had strayed from their way. In England, the Bohemian waxwing has always been a rare visitant, coming only at long and uncertain intervals. In the winter of 1810 large flocks were dispersed through various parts of that kingdom, from which period we do not find it recorded by English writers till the month of February, 1822, when a few came under Mr Selby's inspection, and several were again observed during the severe storm in the winter of 1823. Upon the Continent, its returns are subject to similar uncertainty. In M. Necker's very interesting memoir lately published on the birds of Geneva, we read, that from the beginning of this century only two considerable flights have been observed in that canton, one in January, 1807, and the other in January, 1814, when they were very numerous, and spent the winter there, all departing in March. In 1807 they were dispersed over a great portion of western

Europe, and were seen near Edinburgh in the first days of that year.

What extent of country they inhabit or frequent in this continent, and whether numerous or not, we are unable to state. The specimen here figured was obtained, together with others, from the northwestern range of the Rocky Mountains, and the species appears to spread widely, as we have been credibly informed by hunters that "cedar-birds of a large kind" have been shot a little beyond the Mississippi, at a very great distance from the spot where ours were obtained. Thus does this species extend its range round the whole earth, from the coasts of Europe eastwardly to the Rocky Mountains in America, and we are at a loss to conceive why it should never have been observed on this side of the Mississippi.

Very little is known of the peculiar habits of this elegant bird. It assembles in large flocks, and feeds on different kinds of juicy berries, or on insects, which during summer constitute their principal food. In common with many other birds, they are fond of the berries of the mountain-ash and *phytolacca*, are extremely greedy of grapes, and also, though in a less degree, of juniper and laurel berries, apples, currants, figs, and other fruits. They drink often, dipping in their bill repeatedly. Besides their social disposition, and general love of their species, these birds appear susceptible of individual attachment, as if they felt a particular sentiment of benevolence, even independent of reciprocal sexual attraction. Not only do the male and female caress and feed each other, but the same proofs of mutual kindness have been observed between individuals of the same sex. This amiable disposition, so agreeable for others, often becomes a serious disadvantage to its possessor. It always supposes more sensibility than energy, more confidence than penetration, more simplicity than prudence, and precipitates these, as well as nobler victims, into the snares prepared for them by more artful and selfish beings. Hence they are stigmatized as stupid, and, as they keep gene-

rally close together, many are easily killed at once by a single discharge of a gun. They always alight on trees, hopping awkwardly on the ground. Their flight is very rapid: when taking wing, they utter a note resembling the syllables, *zi, zi, ri*, but are generally silent, notwithstanding the name that has been given them. They are, however, said to have a sweet and agreeable song in the time of breeding, though at others it is a mere whistle. The place of breeding, as we have intimated, is not known with any certainty, though they are said to build in high northern latitudes, preferring mountainous districts, and laying in the clefts of rocks, which, however, judging from analogy, we cannot believe.

What can be the cause of their leaving their unknown abodes, of their wide migrations, and extraordinary irruptions, it is very difficult to determine. That they are not compelled to them by cold is well proved. Are they to be ascribed to necessity from excessive multiplication, as is the case with the small quadrupeds called lemmings, and even with man himself in a savage state, or in over populous countries? or shall we suppose that they are forced by local penury to seek elsewhere the food they cannot be supplied with at home? Much light may be thrown on the subject by carefully observing their habits and migrations in America.

The Bohemian chatterer being so well known, we shall here only give a description of our best American specimen, which is a female shot on the 20th March, 1825, on the Athabasca river, near the Rocky Mountains. The sexes hardly differ in plumage.

Length, eight and a half inches; extent, fifteen; bill, three quarters of an inch long, black, paler at the base of the under mandible; irides, reddish, often quite red; nostrils, entirely uncovered. From the base of the ridge of the bill arises, on each side, a velvety black line, bordering the forehead, and spreading on the ophthalmic region, and surrounding almost the whole crown; throat also deep black. The anterior part of the head is bright bay, behind passing gradually into vina-

ceous drab ; the feathers of the crown are elongated into a crest measuring nearly an inch and a half ; base of these feathers, blackish ; middle, white, whole neck and hind-head and breast, cinereous drab, slightly tinged with vinaceous, and passing by degrees on the posterior parts above and beneath into pure cinereous, slightly tinged with bluish, which predominates on the rump and upper tail-coverts. The black of the throat is somewhat margined with bright bay, and is separated from the black of the eye by a slight obliterated white line. The cinereous of the belly and femorals is paler ; the vent and lower tail-coverts are chestnut rufous, and the feathers very long. The wings measure four and a half inches in length, the second primary is somewhat longer than the first, the others decreasing in succession rapidly. The upper tail-coverts are cinereous drab, like the back, the lower whitish grey ; quills, dusky black, much paler on their inner vane towards the base. The first is unspotted, the second has a slight mark of white on the outer web at tip. This mark increases in size successively on the following, becoming a longitudinal spot, much larger on the secondaries, four of which are furnished with bright red appendages. Each feather of the winglet is broadly white at tip, constituting a remarkable white spot on the wing, which appears to be on the primaries. No yellow whatever is observable on the wing. The tail is three inches long, black, broadly tipped with pale yellow for half an inch, dark bluish grey at base. Tarse, which is three quarters of an inch long, and feet, black.*

* See vol. i. p. 106, for *B. Americana* and notes.—ED.

FEMALE PINE BULLFINCH.—PYRRHULA ENUCLEATOR.

PLATE XVI. FIG. 3.

See *Wilson's American Ornithology*, Pine Grosbeak, *Loxia enucleator*, vol. i. p. 80, pl. 5, fig. 2, for the male at the age of one year.—*Loxia enucleator*, *Linn. Syst.* i. p. 299, sp. 3. *Faun. Suec.* sp. 223. *Schæn, Act. Holm.* 1757, p. 139. *Gmel. Syst.* i. p. 845, sp. 3. *Brunn.* sp. 239. *Muller*, sp. 246. *Borowsk. Nat.* iii. p. 133, sp. 3. *Lath. Ind.* i. p. 372, sp. 5. *Retz. Faun. Suec.* p. 234, sp. 211. *Meyer and Wolf, Taschenb. Vog. Deutschl.* i. p. 142.—*Loxia flamingo*, *Mus. Carls.* i. pl. 17. *Gmel. Syst.* i. p. 864, accid. var.—*Loxia pyrrhula*, var. ♂. *Lath. Ind.* i. p. 388, sp. 56, accid. var.—*Coccothraustes Canadensis*, *Briss. Orn.* iii. p. 250, sp. 15, pl. 12, fig. 3. *Id.* 8vo, i. p. 378.—*Pyrrhula enucleator*, *Temm. Man. Orn.* i. p. 383. *Sabine, Zool. App. to Frank. Exp.* p. 675. *Brehm. Lehr. Eur. Vog.* i. p. 169. *Ranz. Elem. Orn.* vi. p. 70, sp. 2. *Selby, Ill. Brit. Orn.* i. p. 256, pl. 53, fig. 1, male, fig. 2, female. *Nob. Obs. Wils. Nom. Cat. and Syn. Birds U. S.* sp. 193.—*Corythus enucleator*, *Cuv. Règn. Anim.* i. p. 392.—*Strobilophaga enucleator*, *Vieill. Gal. Ois.* i. pl. 53, young male.—*Fringilla enucleator*, *Meyer, Syst. Taschenb.* iii. p. 250, sp. 2.—*Ciufolotto snocciolatore*, *Ranz. loc. cit.*—*Dur-bee, Buff. Ois.* iii. p. 457.—*Gros-bee du Canada*, *Id. Pl. Enl.* 135, fig. 1, male a year old.—*Haken Kernbeisser*, *Bechst. Nat. Deutsch.* iii. p. 28. *Naum. Vog. Nachtr.* pl. 19, fig. 36, male, fig. 37, female.—*Der Fichten Kernbeisser*, *Meyer and Wolf, Vog. Deutschl.* xii. pl. 5, fig. 1, young male, fig. 2, old female.—*Greatest Bullfinch*, *Edwards*, pl. 123, young male, pl. 24, adult female.—*Pine Grosbeak*, *Penn. Brit. Zool.* sp. 114, pl. 49, fig. 2. *Arct. Zool.* ii. sp. 209. *Ellis, Narr.* ii. p. 15. *Lewin, Brit. Birds*, ii. pl. 68. *Lath. Syn.* ii. p. 111, sp. 5. *Id. Supp.* p. 148. *Mont. Orn. Dict.* i. *Walck. Syn.* pl. 207. *Donov. Brit. Birds*, i. pl. 17. *Bewick, Brit. Birds*, i. p. 135. *Shaw's Zool.* ix. p. 238, pl. 43. *Ubers.* ii. p. 106, sp. 5.—*Flamingo Grosbeak*, *Lath. Syn. Suppl.* p. 155, accid. var. *My Collection*, male, female, and young.

CORYTHUS ENUCLEATOR.—CUVIER.*

Pyrrhula (corythus) enucleator, *North. Zool.* ii. p. 262.

THE female pine bullfinch is eight and a half inches long, and thirteen and a half in extent; the bill measures more than half an inch, is blackish, with the lower mandible paler at base; the feathers of the whole head, neck, breast, and rump, orange, tipped with brownish, the orange richer on the crown, where

* See description of the male, note, &c., vol. i. p. 79.

are a few blackish dots, the plumage at base plumbeous ; the back is cinereous, somewhat mixed with orange ; the shafts darker ; belly and femorals, pure cinereous ; lower tail-coverts, whitish, shafted with dusky ; the wings are four and a half inches long, reaching beyond the middle of the tail ; the smaller coverts are similar to the back, cinereous, slightly tinged with orange ; middle and larger, blackish, margined with whitish exteriorly and widely at tip ; the lower coverts are whitish grey ; quills, blackish, primaries margined with pale greenish orange, secondaries and tertials with broad white exterior margins ; the tail is three and three quarter inches long, blackish, the feathers with narrow pale edges ; feet, dusky ; nails, blackish.

In the young female, the head and rump are tinged with reddish. The male represented and most accurately described by Wilson, is not adult, but full one year old ; at which period, contrary to the general law of nature, it is the brightest, as was first stated by Linné, though his observation has since been overlooked, or unjustly contradicted. In the adult male, the parts that were crimson in the immature bird, exhibit a fine reddish orange, the breast and belly being also of that colour, but paler ; the bars of the wings, tinged with rose in the young, become pure white.

We have nothing to add to Wilson's history of this bird. Although, after the example of Temminck and others, we place this species at the head of the bullfinches, we cannot avoid remarking, that its natural affinities connect it most intimately with the crossbills, being allied to them closely in its habits, and in its form, plumage, general garb, and even in its anomalous change of colours. The bill, however, precisely that of a bullfinch, induces us to leave it in that genus, between which and the crossbills it forms a beautiful link ; the obtuse point of the lower mandible, but especially the small, porrect, setaceous feathers covering the nostrils, as in these latter, eminently distinguish it from all others of its own genus. These characters induced Cuvier to propose it as a subgenus,

under the name of *Corythus*; and Vieillot as an entirely distinct genus, which he first named *Pinicola*, but has since changed it to *Strobilophaga*. These authors have of course been followed by the German and English ornithologists of the new school, who appear to consider themselves bound to acknowledge every genus proposed, from whatever quarter, or however minute and variable the characters on which it is based.

WHITE-CROWNED PIGEON.—COLUMBA LEUCOCEPHALA.

PLATE XVII. FIG. 1.

Columba leucocephala, *Linn. Syst. i. p. 281, sp. 14. Gmel. Syst. i. p. 772, sp. 14. Lath. Ind. p. 594, sp. 5. Temm. Ind. Col. in Hist. Pig. et Gall. i. p. 459. Vieill. Gal. Ois. ii. p. 331, pl. 194.*—*Columba minor leucocoryphas, Rati Syn. p. 63, sp. 16, and p. 184, sp. 24. Klein, Av. p. 120, sp. 18.*—*Columba saxatilis, Jamaicensis, Briss. Orn. i. p. 137, sp. 33. Id. 8vo. i. p. 34.*—*Columba capite albo, The White-crowned Pigeon, Catesby, Car. i. p. 25, pl. 25. Seligman, Saml. Selt. Vog. 2, col. plate.*—*Le Pigeon de rocbe de la Jamaïque, Buff. Ois. ii. p. 529. Sonn. Buff. vii. p. 216.*—*Colombe à calotte blanche, Temm. Hist. Pig. et Gall. i. p. 204. Id. folio, pl. 13 of the second family. My Collection. Edinburgh College Museum.*

COLUMBA LEUCOCEPHALA.—LINNEUS.

Columba leucocephala, Bonap. Synop. p. 119.

THIS bird has been already alluded to in our first volume, when pointing out the difference between it and the new *Columba fasciata* of Say. We were then far from supposing that we should so soon have to become its historian; but having ascertained that it inhabits Florida, as well as the West Indies, we are enabled to give it a place in these pages. A glance at the plate will now render the difference strikingly obvious to the American student, who will thus perceive, better than can be explained by words, how entirely distinct the above named species is from the present.

The white-crowned pigeon, well known as an inhabitant of Mexico and the West Indies, is likewise found in great numbers on some of the Florida Keys, such as Key Vacas, and

others, early in spring, where it feeds almost exclusively on a kind of wild fruit, usually called beach plum, and some few berries of a species of palmetto, that appears to be peculiar to those keys. It is also extensively spread in Jamaica and St Domingo, and is very abundant in the Island of Porto Rico, frequenting deep woods, and breeding on rocks, whence they are called by some, rock pigeons. They are very numerous on all the Bahama Islands, and form an important article of food with the inhabitants, particularly when young, being then taken in great quantities from the rocks where they breed. On the Florida keys also they breed in large societies, and the young are much sought after by the wreckers. They there feed principally on berries, and especially on those of a tree called sweetwood. When the fruit of this is ripe, they become fat and well-flavoured, but other fruits again make their flesh very bitter.

Buffon, in accordance with his whimsical idea of referring foreign species to those of Europe, considers the present as a variety of the biset (*Columba livia*, Briss.) To that bird it is in fact allied, both in form and plumage, and has, moreover, the same habit of breeding in holes and crevices of rocks; but it is, at the same time, entirely distinct.

The size of the white-crowned pigeon has been underrated by authors. Its length is fourteen inches, and its extent twenty-three; the bill is one inch long, carmine red at the base, the end from the nostrils being bluish white; the irides are orange yellow, the bare circle round the eye, dusky white, becoming red in the breeding season; the entire crown, including all the feathers advancing far on the bill, is white, with a tinge of cream colour, and is narrowly margined with black, which passes insensibly into the general deep slate colour: on the nape of the neck is a small deep purplish space, changing to violet; the remainder of the neck above, and on the sides, is covered by scale-like feathers, bright green, with bluish and golden reflections, according as the light falls; the sides of the head, the body above, and whole inferior surface, the wings

and tail above and beneath—in short, the whole bird, without any exception but the parts described, is of a uniform deep bluish slate, much lighter on the belly, more tinged with blue on the stout-shafted rump feathers, somewhat glossy, and approaching to brownish black on the scapulars: the quills are more of a dusky black; the wings are nearly eight inches long, reaching, when closed, to two-thirds of the tail; the first primary is somewhat shorter than the fourth, and the second and third are longest; the third is curiously scalloped on the outer web, which is much narrowed for two inches from the tip; all are finely edged with whitish; the tail is five inches long, perfectly even, of twelve uniform broad feathers, with rounded tips; the feet are carmine red, the nails dusky; the tarsus measures less than an inch, being subequal to the lateral toes, and much shorter than the middle one. The female is perfectly similar. It is one of this sex, shot in the beginning of March, that is represented in the plate, and is perhaps a young, or not a very old bird; for it would seem, that as they advance in age, these pigeons become somewhat lighter coloured, the crown acquiring a much purer white. This, however, we only infer from authors, our plate and description being faithfully copied from nature.

The young are distinguished by duller tints, and the crown is at first nearly uniform with the rest of their dark plumage: this part, after a time, changes to grey, then greyish white, and becomes whiter and whiter as the bird grows older. It is proper to remark, after what has been said under the article of the band-tailed pigeon, in vol. i., that the white colour extends equally over the whole crown, not more on one part than another; thus never admitting of a restricted band or line, as in that much lighter coloured bird.

Another species closely allied to, and perhaps identical with, our band-tailed pigeon, (though we have equally good reasons for believing it the *Columba rufina* of Temminck,) and of which we have not yet been able to procure specimens, is also

well known to breed on the Florida keys, whither probably almost all the West Indian species occasionally resort.

ZENAIDA DOVE.—COLUMBA ZENAIDA.—PLATE XVII. FIG. 2.

Columba zenaida, *Nob. Add. Orn. U. S. in Journ. Acad. Phil. Id. Cat. Birds U. S.* sp. 198, in *Contr. Macl. Lyc. Ph. i.* p. 22. *Id. Syn. Birds U. S.* sp. 198, in *Ann. Lyc. Nat. Hist. N. Y. ii.* p. 119. *Id. Suppl. in Zool. Journ. Lond. v.* p. 6. *My Collection.*

COLUMBA? ZENAIDA.—BONAPARTE.

THE name of dove is not commonly used to designate a systematic group, but is employed for all the small pigeons indiscriminately, whilst the larger doves are known as pigeons. Even this distinction of size, however, does not seem to be agreed upon, as we find authors calling the larger species doves, and the smaller ones pigeons, and sometimes even applying both appellations to different sexes or ages of the same species, as in the case of the common American pigeon, *Columba migratoria*. This extensive family of birds, so remarkable for richness and splendour of colours—so important as contributing largely to supply the wants of mankind—so interesting as forming so perfect a link between the two great divisions of the feathered tribes—has been divided, on more philosophical principles, into three groups, which some naturalists consider as genera, and others as subgenera, or sections. Of these, two only are found represented in America; the third, a very natural group, being confined to Africa and the large eastern islands of the old world. That to which the present bird, and all the North American species but one, belong, is the most typical of all, being characterised by a straight and slender bill, both mandibles of which are soft and flexible, and the upper turgid towards the end; by their short tarsi, divided toes, and long, acute wings, with the first primary somewhat shorter than the second, which is the longest. This group (the true pigeons and doves) is, however, so nu-

merous in species, that we cannot but wonder that it should still remain comparatively untouched by the reforming hand of our contemporaries; especially seeing that as good reasons may be found for subdividing them as the parrots, and other large natural groups. We may indicate the differences exhibited in the form of the scales covering the tarsus, and the shape of the tail, &c., as offering characters on which sections or genera could be founded. But as the species of the United States, which are those we are to treat of, are but few, we shall leave the promising task to any one whose researches may lead him to engage in it; and shall only observe, that the two species described by Wilson, belong to a different group from the three we have since introduced into the Fauna of this country. Of these, the present beautiful dove is the only one hitherto undescribed.

This new and charming little species inhabits the Florida keys with the preceding, but is much more rare. We have also received it from Cuba, and noticed a specimen in a collection of skins sent from that island by Mr MacLeay, to the Zoological Society of London. They are fond of being on the ground, where they are most commonly observed dusting themselves, and seeking for the gravel, which, like the gallinaceous birds, they swallow to assist digestion. When flushed, they produce the same whistling noise with their wings as the common turtle-dove, *Columba Carolinensis*.

The Zenaida dove measures ten inches in length. The bill is somewhat more robust than that of the common dove, but otherwise perfectly similar, less than an inch long, black, the corners of the mouth being lake; the irides are dark brown, the pupil of the eye large, and the eye itself full, giving the whole bird a mild and pleasing expression; the naked orbits are of a bluish grey. The whole plumage above is yellowish ashy brown, tinged with vinaceous on the crown, and paler on the sides of the head and neck; under the ears is a small bright rich and deep violaceous spot, rivalling the amethyst in splendour; and above this a similar smaller one, not very distin-

guishable ; the sides of the neck before the bend of the wing exhibit splendid golden violaceous reflections, slightly passing into greenish in different lights ; the scapulars are spotted with black, the spots being large and roundish ; the exterior wing-coverts, spurious wing and quill feathers, are blackish ; the primaries are edged with white externally, and, with the exception of the outer ones, at tip also ; the secondaries are broadly terminated with white ; the chin is yellowish white ; the whole inferior surface is bright vinaceous, paler on the throat, and gradually passing into richer on the belly ; the flanks and under wing-coverts are delicate lilac, and the under tail-coverts are mixed with the same colour, some of the longest being entirely lilac, which is also found at the base of the plumage on the belly and rump ; the wings are six inches and a quarter long, reaching within one inch of the tip of the tail ; the primaries are entire on both vanes ; the first is longer than the fourth, the second longest, though scarcely longer than the third ; the tail is four and a half inches long, composed of twelve broad, full, rounded feathers, extending but one inch beyond their coverts ; it is nearly even, and of the colour of the body, with a broad black band at two-thirds of its length, obsolete on the two middle feathers, (which are of the colour of the body,) purer on the three exterior ; the lateral feathers are pearl grey for half an inch towards the tip, the outer plume being moreover of that colour on the outer vane ; all the tail-feathers are blackish on the inferior surface to within three quarters of an inch of their tips. The feet are red ; the nails blackish ; the tarsus measures three quarters of an inch in length.

The female is very similar to the male in size and colour ; the head, however, is but slightly tinged with vinaceous, the golden violet reflections of the neck are not quite so vivid, and the inferior surface of a paler vinaceous, but graduated as in the male. The lateral tail-feathers are also much more uniform with the middle one, and of course with the back, the three

outer only on each side being pearl grey at tip. This latter character, however, we should rather attribute to age than sex, if we had not good reason to believe that our female is a perfectly adult bird.

At first sight, the Zenaida dove might perhaps be mistaken for the common turtle dove, (*Columba Carolinensis*, and *marginata* of authors,) having the same general colour and several common markings; but, to mention no other differential character, the short even tail, composed of but twelve feathers, all rounded, the outer bluish grey at tip, will at once distinguish it from the latter, which belongs to a different group, having the tail long cuneiform, and (what is found in no other American species, not even its close relation, the passenger pigeon) composed of fourteen tapering and acute feathers, the two middle remarkably so, and the lateral pure white at tip. If any other distinction should be required, the white tips of the secondaries of our new species will afford a good one, as well as the outer tail-feather, the exterior web of which is blue grey, crossed, as well as the others, by the black band; whilst in the *C. Carolinensis* it is entirely pure white, the black band being confined to the inner web.

DUSKY GROUSE.—TETRAO OBSCURUS.—PLATE XVIII.

FEMALE.

Tetrao obscurus, Say, in *Long's Exped. to Rocky Mount.* ii. p. 14. *Nob. Cat. Birds U. S.* sp. 209, in *Contr. Macl. Lyc. Phila.* i. p. 23. *Id. Syn. Birds U. S.* sp. 207, in *Ann. Lyc. Nat. Hist. N. Y.* pp. 127, 442. *Philadelphia Museum*, female. *Collection of Mr Sabine, in London*, male and female.

TETRAO OBSCURUS.—SAY.*

Tetrao obscurus, *North. Zool.* ii. p. 334, plate 59, m., 60, f.

LINNE, in his genus *Tetrao*, brought together so great a number of species bearing no more than a distant resemblance to each other, and differing not only in their external charac-

* The authors of the *Northern Zoology* have given a beautiful figure of this bird, and have quoted the *T. Richardsonii* of Douglass as identical with it. This I am unable to decide, but should certainly give some weight to the comparisons of Dr Richardson, who thinks that those deposited in the Edinburgh Museum are only younger specimens.

The characters given by Mr Douglass are :—

T. RICHARDSONII, *Mas.*—Pallidé plumbeo-griseus fusco sparsim undulatus : gulæ plumis in medio albis : abdomine saturatiore albo parcé maculato : maculâ laterali sub nuchâ albâ : rectricibus nigris, apice albicante.

Fem.—Minor, brunnescenti-grisea, dorso brunneo fasciato ; subtùs albo frequenter notato rectricibus duobus mediis ferrugineo fasciatis.

That gentleman mentions a trait in their manners, which he thinks is peculiar to this species. "On being started from the dark shadowy pine-trees, their usual roosting-place, they descend, or, more properly, allow themselves to fall within a few feet of the ground, before they commence flying, a circumstance which often leads the sportsman to think he has secured his bird, until the object of his attention leaves him, darting and floating through the forest."

They were very abundant on the sub-Alpine regions of the Rocky Mountains, in lat. 52 deg., and still more numerous on the mountainous districts of the river Columbia, in lat. 48 deg. They were rare, however, on the north-west coast.

The specimens in the Edinburgh Museum have been accurately figured by Mr J. Wilson in his *Illustrations of Zoology*, under the name of *T. Richardsonii*. —ED.

ters, but even in their peculiar habits, that he might, with almost the same propriety, have included in it all typical gallinaceous birds. Latham very judiciously separated the genus *Tinamus*, as well as that of *Perdix*, which latter he restored from Brisson. Illiger likewise contributed to our better knowledge of these birds, by characterising two more natural genera, *Syrrhaptes* and *Ortygis*. Temminck, in his *Histoire des Gallinacés*, carried the number to seven, but has since reduced it by reuniting *Coturnix* to *Perdix*.

The true *Tetraones* are divided by Vieillot into two genera, the *Lagopodes* forming a distinct one by themselves. These, however, we regard as no more than a subgenus, of which we distinguish three in our genus *Tetrao*. I. *Lagopus*, which represents it in the Arctic Polar regions; for whose climate they are admirably adapted by being clothed to the very nails in plumage suited to the temperature, furnished abundantly with thick down, upon which the feathers are closely applied. The colour of their winter plumage is an additional protection against rapacious animals, by rendering it difficult to distinguish them from the snows by which they are surrounded. II. *Tetrao*, which is distributed over the more temperate climates; the legs being still feathered down to the toes. III. *Bonasia*, a new division, of which we propose *Tétrao bonasia*, L. as the type, in which only the upper portion of the tarsus is feathered. These occasionally descend still farther south than the others, inhabiting wooded plains as well as mountainous regions, to which those of the second section are more particularly attached. But the entire genus is exclusively boreal, being only found in Europe, and the northern countries of America and Asia. The long and sharp-winged grouse, or *Pterocles* of Temminck, which represent, or rather replace these birds in the arid and sandy countries of Africa and Asia, a single species inhabiting also the southern extremity of Europe, we consider, in common with all modern authors, as a totally distinct genus. That group, composed of but few species, resort to the most desert regions, preferring dry and burning wastes to the cool shelter of the woods. These oceans,

as they might be termed, of sand, so terrific to the eye and the imagination of the human traveller, they boldly venture to cross in large companies in search of the fluid so indispensable to life, but there so scarce, and only found in certain spots. Over the intervening spaces they pass with extraordinary rapidity, and at a great elevation, being the only gallinaceous birds furnished with wings of the form required for such flights. This, however, is not the only peculiarity in which they aberrate from the rest of their order, and approach the pigeons, being said to lay but few eggs, the young remaining in the nest until they are full fledged, and fed in the meantime by the parents.

The grouse dwell in forests, especially such as are deep, and situated in mountainous districts; the *Bonasia*, however, and the *Tetrao cupido*, frequenting plains where grow trees of various kinds. The *Lagopodes* of the Arctic regions, or ptarmigans, are also found on the very elevated mountains of central Europe, where the temperature corresponds to that of more northern latitudes. Here they keep among the tufts of dwarf willows, which, with pines, form the principal vegetation of these climates. The grouse feed almost exclusively on leaves, buds, berries, and especially the young shoots of trees, pines, spruce, or birch, resorting to seeds only when compelled by scarcity of other food, or when their usual means of subsistence are buried beneath the snow. They sometimes, especially when young, pick up a few insects and worms, and are fond of ants' eggs. Like other gallinaceous birds, they are constantly employed in scratching the earth, are fond of covering themselves with dust, and swallow small pebbles and gravel to assist digestion. No birds are more decidedly and tyrannically polygamous. As soon as the females are fecundated, the male deserts them, caring no farther about them nor their progeny, to lead a solitary life. Like perfidious seducers, they are full of attention, however, and display the greatest anxiety to secure the possession of those they are afterwards so ready to abandon. The nuptial season commences when the leaves first appear in spring. The males then appear

quite intoxicated with passion : they are seen, either on the ground, or on the fallen trunks of trees, with a proud deportment, an inflamed and fiery eye, the feathers of the head erected, the wings dropped, the tail widely spread, parading and strutting about in all sorts of extravagant attitudes, and expressing their feelings by sounds so loud as to be heard at a great distance. This season of ardour and abandonment is protracted till June. The deserted female lays, unnoticed by the male, far apart on the ground, among low and thick bushes, from eight to sixteen eggs, breeding but once in a season. They sit and rear their young precisely in the manner of the common fowl, the chicks being carefully protected by the mother only, with whom they remain all the autumn and winter, not separating until the return of the breeding season. It is only at this period that the males seek the society of the females.

The grouse are remarkably wild, shy, and untameable birds, dwelling in forests or in barren uncultivated grounds, avoiding cultivated and thickly inhabited countries, and keeping together in families. The *Lagopodes* only live in very numerous flocks, composed of several broods, parting company when the return of spring invites them to separate in pairs of different sexes, which is always done by the birds of this division. Except in the breeding season, the grouse keep always on the ground, alighting on trees only when disturbed, or when going to roost at night ; by day retiring to the deepest part of the forest. The flesh of all grouse is delicious food, dark-coloured in some, and white in others, the dark being more compact, juicy, and richly flavoured, as in *Tetrao cupido* ; while the white, though somewhat dry, is distinguished for delicacy and lightness. Such are the *Bonasiæ*, *T. umbellus* of America, and *T. bonasia* of Europe.

The grouse are distinguished by a short stout bill, feathered at base, and they are, of all gallinaceous birds, those in which the upper mandible is the most vaulted ; the feathers of the bill are very thick and close, and cover the nostrils entirely ; the tongue is short, fleshy, acuminate, and acute ; the eye is

surmounted by a conspicuous red and papillous naked space; the tarsi are generally spurless in both sexes, and partly or wholly covered with slender feathers, which in the *Lagopodes* are thicker and longer than in the rest, extending not only beyond the toes, but growing even on the sole of the foot—a peculiarity which, agreeably to the observation of Buffon, of all animals is again met with only in the hare. These feathers in winter become still longer and closer. All the others have the toes scabrous beneath, and furnished with a pectinated row of processes on each side.* This roughness of the sole of the feet enables them to tread firmly on the slippery surface of the ground or frozen snow, or to grasp the branches of trees covered with ice. Their nails are manifestly so formed as to suit them for scratching away the snow covering the vegetables which compose their food. The wings of the grouse are short and rounded; the first primary is shorter than the third and fourth, which are longest. The tail is usually composed of eighteen feathers, generally broad and rounded. The red grouse, *T. Scoticus*, however, and the European *Bonasia*, and *T. Canadensis*, or spotted grouse, have but sixteen; while our two new North American species have twenty, one of them having these feathers very narrow and pointed, the narrowness being also observed in the sharp-tailed grouse. They have the head small, the neck short, and the body massive and very fleshy.

The females of the larger species differ greatly from the males, which are glossy black, or blackish, while the former are mottled with grey, blackish, and rufous: such are all the typical *Tetraones* of Europe, and the cock of the plains, the dusky and the spotted grouse of America. The smaller species, in which both sexes are mottled, such as *T. phasianellus* and *T. cupido*, exhibit little or no difference in the plumage of the two sexes; which is also the case in all the *Bonasia* and *Lago-*

* These processes are liable to fall off, at least in preserved skins. It is owing to this circumstance that we committed several errors in characterising these birds in our *Synopsis of the Birds of the United States*.

podes. The young in their first feathers are in all respects like the female, and the males do not acquire their full plumage until after the second moult. All moult twice a-year, and most of the *Lagopodes* change their colours with the seasons in a remarkable manner.

The genus *Tetrao* is now composed of thirteen species,—three *Lagopodes*, two *Bonasiæ*, and eight typical *Tetraones*. This enumeration does not include the *Tetrao rupestris*, which we do not consider well established, any more than the new species of Mr Brehm. The species of *Lagopus*, as might be inferred from their inhabiting high northern latitudes, are common to both continents, with the exception of the red grouse, *T. Scoticus*, which is peculiar to the British islands, and which, from its not changing the colours of its plumage with the seasons, may be considered as forming the passage to the true *Tetraones*. Of these, there are five in North America, each and all distinct from the three European. Of the two *Bonasiæ*, one is peculiar to the old, and the other to the new continent, the former having sixteen, the latter eighteen feathers to the tail. Thus the entire number is seven in Europe, while it is eight in North America. Setting aside the two common to both, and the respective *Bonasiæ*, we may consider the cock of the woods of Europe as the parallel of the cock of the plains of America. The black grouse, *T. tetrrix*, will find its equivalent in the dusky grouse, *T. obscurus*; but the *T. hybridus* has no representative in America, any more than the *T. Scoticus*. These, however, are more than replaced as to number, by the *T. phasianellus*, *T. cupido*, and *T. Canadensis*, all American species, which have none corresponding to them in the old world.

Perhaps no other naturalist has personally inspected all the known species of this genus of both continents, and having examined numerous specimens even of some of the rarest, and possessing all but one in my own collection, my advantages are peculiar for giving a monography of this interesting genus. Such a work it is my intention hereafter to publish, illustrated

with the best figures, and accompanied with farther details respecting their habits. In the mean time, I shall merely state, that, being replaced in Africa by *Pterocles*, and in South America by *Tinamus*, all the known species of grouse are found in North America, or in Europe, the European also inhabiting Asia; from whose elevated central and northern regions, yet unexplored, may be expected any new species that still remain to be discovered. The extensive wilds of North America may also furnish more, though we do not think so; for since we have become acquainted with both sexes of the dusky grouse, and the cock of the plains, we have been able to refer satisfactorily to known species all those of which any indications occur in the accounts of travellers in this country.

North America is exceeded by no country in the beauty, number, and valuable qualities of her grouse; and she is even perhaps superior to all others in these respects, since the discovery of the cock of the plains. Although the careful and accurate researches of Wilson had led him to the belief that there existed but two species of grouse in the territory of the United States, no less than six are now known to inhabit within their boundaries. But we are not aware that any of the subgenus *Lagopus* ever enters the confines of the Union, notwithstanding the pains we have taken to obtain information on this point, from the high northern districts of Maine and Michigan, in which, if any where, they are most likely to be discovered. It would, however, be very extraordinary if these birds, which are found in the Alps of Switzerland, should not also inhabit the lofty ranges of the Rocky Mountains, which are known to be the resort of the various species of grouse. With the exception, therefore, of the well-known *Tetrao umbellus*, which belongs to *Bonasia*, all the others are true grouse, *Tetraones*.

The spotted, and the sharp-tailed grouse, were long since known as inhabitants of that part of America north of the United States, but the two others are newly added, not only to our Fauna, but to the general system, being found for the

first time in the American territory, and not elsewhere. For the history of the discovery, the manners, habitation, and a particular description of each of these, we shall refer the reader to their several articles.

The dusky grouse is eminently distinguished from all other known species by having the tail slightly rounded, and composed of twenty broad and rounded feathers. This peculiarity of the extraordinary number of tail-feathers, is only found besides in the cock of the plains, in which, however, they are not rounded, but very slender, tapering, and acute. In size and colour, the dusky grouse may be compared to the black grouse of Europe, so remarkable for the outward curvature of the lateral feathers of the tail.

The figure in our plate is taken from the specimen on which Say established the species; this was killed on a mountain in the great chain dividing the waters of the Mississippi from those which flow towards the Pacific, at a spot where, on the 10th of July, 1820, the exploring party of Major Long were overlooking, from an elevation of one or two thousand feet, a wide extent of country. A small river poured down the side of the mountain, through a deep and inaccessible chasm, forming a continued cascade of several hundred feet. The surface of the country appeared broken for several miles, and in many of the valleys could be discerned columnar and pyramidal masses of sandstone, some entirely naked, and others bearing small tufts of bushes about their summits. When the bird flew, and at the unexpected moment of its death, it uttered a cackling note, somewhat resembling that of the domestic fowl.

The female dusky grouse is eighteen inches in length. The bill measures precisely an inch, which is small in proportion; it is blackish, with the base of the under mandible whitish. The general colour of the plumage is blackish brown, much lighter on the neck and beneath, all the feathers having two or three narrow bars of pale ochreous, much less pure and bright on the neck and breast; the small short feathers at the

base of the bill covering the nostrils are tinged with ferruginous, those immediately nearest the forehead have but a single band, and are slightly tipped, while the larger ones of the neck, back, rump, and even the tail-coverts, as well as the feathers of the breast, have two bands and the tip. These rufous terminal margins, on the upper portion of the back, and on the tail-coverts, are broad, and sprinkled with black, so as to be often blended with the lower band. The sides of the head and the throat are whitish, dotted with blackish, the black occupying both sides of each feather, deepening and taking a bandlike appearance on the inferior portion of the upper sides of the neck; on each feather of the breast is a whitish band that becomes wider on those nearest the belly; the flanks are varied with rufous, each feather having, besides the small tip, three broad cross lines of that colour, and a white spot at the tip of the shaft, increasing in size as they are placed lower; the belly feathers are plain dull cinereous, the lower tail-coverts are white, black at their base, with one or two black bands besides, and tinged between the bands with greyish ochreous; the wings are nine and a half inches long, with the third and fifth primaries subequal; the coverts, as well as the scapulars, are of the general colour, with about two bands, the second of which is sprinkled as well as the tip, each feather being white on the shaft at tip; the primaries, secondaries, and outer wing-coverts, including their shafts, are plain dusky; the secondaries have ochreous zigzag marks on their outer webs, and are slightly tipped with dull whitish; the primaries themselves are somewhat mottled with dingy white externally, but are notwithstanding entirely without the regular white spots so remarkable in other grouse; the lower wing-coverts, and long axillary feathers, are pure white. The tail measures in length seven and a half inches, is very slightly rounded, of twenty broad feathers, of which the lateral are plain blackish, with the exception of a few whitish dots at the base of their outer webs, and the middle ones being varied with rufous dots disposed like the bands across their whole

width ; all are thickly dotted with grey for half an inch at tip, which in the specimen figured, but by no means so much so in others, gives the tail an appearance of having a broad terminal band of cinereous sprinkled with blackish. This circumstance evinces the inutility of describing with the extreme minuteness to which we have descended in this instance, as, after all the pains bestowed, the description is only that of an individual. The tail is pure black beneath, considerably paler at tip and on the undulations of the middle feathers. The tarsus is three quarters of an inch long ; the feathers with which it is covered, together with the femorals, are pale greyish ochreous, undulated with dusky ; the toes are dusky, and the nails blackish.

The male is but little larger, and entirely, but not intensely, black. We can, however, say very little about it, having taken but a hasty and imperfect view of a specimen belonging to Mr Sabine of London, and writing merely from recollection. The tail-feathers are wholly black, perfectly plain and unspotted ; and in the female and young, they are but slightly mottled, as is seen in almost all grouse. Mr Sabine has long had this bird in his possession, and intended dedicating it, as a new species, to that distinguished traveller, Dr Richardson.

SHARP-TAILED GROUSE.—TETRAO PHASIANELLUS.

PLATE XIX.

Tetrao phasianellus, *Linn. Syst.* ed. 10, p. 160. *Gmel. Syst.* i. p. 747. *Forst. Phil. Trans.* lxii. pp. 394 and 425. *Lath. Ind. Orn.* p. 635, sp. 2. *Briss. Suppl.* p. 9. *Temm. Ind. Gall.* in *Hist. Pig. and Gall.* iii. p. 702. *Vieill. Nouv. Dict. Hist. Nat. Sabine, Zool. App. to Frankl. Exped.* p. 681. *Nob. Cat. Birds U. S.* sp. 208. *Id. Syn. Birds U. S.* sp. 209.—*Tetrao urogallus*, var. β , *Linn. Syst.* i. p. 273, sp. 1.—Gelinotte à longue queue, *Buff. Ois.* ii. p. 286. *Sonn. Buff.* vi. p. 72. *Bonat. Tabl. Encyc. Orn.* p. 196, pl. 91, fig. 1.—Francolin à longue queue, *Hearne, Voy. à l'Océan du Nord*, (Fr. transl.) p. 386.—*Tetras phasianelle*, *Temm. Pig. et Gall.* iii. p. 152.—Long-tailed Grouse, *Edwards, Glean.* pl. 117. *Lath. Syn.* iv. p. 732. *Id. Suppl.* p. 21.—Sharp-tailed Grouse, *Penn. Arct. Zool.* sp. 181.—The Grouse, or Prairie Hen, *Lewis and Clark, Exp.* ii. p. 180, sp. 1.—*Philadelphia Museum*, female.—*My Collection*, male and female.

TETRAO PHASIANELLUS.—LINNÆUS.

Tetrao (*Centrocercus*) *phasianellus*, *Swain. North. Zool.* ii. p. 361.

THIS species of grouse, though long since said to inhabit Virginia, is, in fact, a recent acquisition to the Fauna of the United States; for it was only through an awkward mistake that it was ever attributed to that country. Mitchell, upon an inspection of Edwards's bad drawing of this bird, mistaking it for the ruffed grouse of that and the neighbouring states, declared it to be an inhabitant of Virginia; and upon his authority Edwards gave it as such. This statement, however, led Wilson into the erroneous belief of the identity of the two species, in which he was farther confirmed, when, after the most careful researches, he became satisfied that the ruffed grouse was the only species to be found in Virginia.

The gallant and lamented Governor Lewis gave the first authentic information of the existence of this bird within the limits of these States. He met with it on the upper waters of the Missouri, but observes, that it is peculiarly the inhabitant of the great plains of the Columbia. He states also, that the scales, or lateral processes of the toes, with which it is furnished in winter, like the rest of its genus, drop off in summer.

Say introduced the species regularly into the scientific records of his country. The expedition under Major Long brought back a specimen now in the Philadelphia Museum, from which, though a female, and unusually light coloured, we have had our drawing made, on account of its having been procured in the American territory. The bird is never seen in any of the Atlantic states, though numerous in high northern latitudes. It is common near Severn River and Albany Fort, inhabiting the uncultivated lands in the neighbourhood of the settlements, and particularly near the southern parts of Hudson's Bay, being often killed in winter near Fort York; but it does not extend its range to Churchill. Near Fort William, on Lake Superior, the sharp-tailed grouse is also found in spring, and we have seen specimens killed in winter at Cumberland House, and others at York Factory in summer. In collections it is very rare; and Temminck, when he wrote his history of gallinaceous birds, had never seen a specimen, nor did it exist at the time in any European museum.

It is by the shape of the tail that this grouse is eminently distinguished from all others. The English name, which we have, with Mr Sabine, selected from Pennant, is much more applicable than that of long-tailed, given by Edwards; for instead of being long, it is, except the middle feathers, remarkably short, cuneiform, and acute, more resembling that of some ducks than of the pheasant. By the elongated feathers, but in no other particular, this species approaches the African genus *Pterocles*. At Hudson's Bay it is called pheasant, a name which, though inappropriate, seems, at least, better applied to this than the ruffed grouse.

The original writers that have mentioned this grouse are, Edwards, who first introduced it, and has figured the female from a badly stuffed specimen, being, however, the only figure before ours; Pennant; Hearne, who has given the most information concerning its habits, derived from personal observation; and Forster, who has described it with accuracy. Linné

at first adopted it from Edwards, but afterwards most unaccountably changed his mind, and considered it as a female of the European cock of the woods. It was restored by Latham and others to its proper rank in the scale of beings.

The sharp-tailed grouse is remarkably shy, living solitary, or by pairs, during summer, and not associating in packs till autumn; remaining thus throughout the winter. Whilst the ruffed grouse is never found but in woods, and the pinnated grouse only in plains, the present frequents either indifferently. They, however, of choice, inhabit what are called the juniper plains, keeping among the small juniper bushes, the buds constituting their principal food. They are usually seen on the ground, but when disturbed, fly to the highest trees. Their food in summer is composed of berries, the various sorts of which they eagerly seek: in winter they are confined to the buds and tops of evergreens, or of birch and alder, but especially poplar, of which they are very fond. They are more easily approached in autumn than when they inhabit large forests, as they then keep alighting on the tops of the tallest poplars, beyond the reach of an ordinary gun. When disturbed in that position, they are apt to hide themselves in the snow; but Hearne informs us, that the hunter's chance is not the better for that; for so rapidly do they make their way beneath the surface, that they often suddenly take wing several yards from the spot where they entered, and almost always in a different direction from that which is expected.

Like the rest of its kind, the sharp-tailed grouse breeds on the ground near some bush, making a loose nest with grass, and lining it with feathers. Here the female lays from nine to thirteen eggs, which are white spotted with blackish. The young are hatched about the middle of June; they utter a piping noise, somewhat like chickens. Attempts have been repeatedly made to domesticate them, but have as constantly failed, all the young, though carefully nursed by their stepmother, the common hen, dying one after another, probably for want of suitable food. This species has several cries: the cock

has a shrill crowing note, rather feeble ; and both sexes, when disturbed, or whilst on the wing, repeat frequently the cry of *cack, cack*. This well-known sound conducts the hunter to their hiding-place, and they are also detected, by producing with their small, lateral, rigid tail-feathers, a curious noise, resembling that made by a winnowing fan. When in good order, one of these grouse will weigh upwards of two pounds, being very plump. Their flesh is of a light brown colour, and very compact, though, at the same time, exceedingly juicy and well tasted, being far superior in this respect to the common ruffed, and approaching in excellence the delicious pinnated grouse.

The adult male sharp-tailed grouse, in full plumage, is sixteen inches long, and twenty-three in breadth. The bill is little more than an inch long, blackish, pale at the base of the lower mandible, and with its ridge entering between the small feathers covering the nostrils : these are blackish, edged with pale rusty, the latter predominating ; the irides are hazel. The general colour of the bird is a mixture of white, and different shades of dark and light rusty, on a rather deep and glossy blackish ground, the feathers of the head and neck have but a single band of rusty, and are tipped with white ; those, however, of the crown, are of a much deeper and more glossy black, with a single marginal spot of rusty on each side, and a very faint tip of the same, forming a tolerably pure black space on the top of the head. The feathers between the eye and bill, those around the eye, above and beneath, on the sides of the head, and on the throat, are somewhat of a dingy yellowish white, with a small black spot on each side, giving these parts a dotted appearance ; but the dots fewer and smaller on the throat. The feathers of the back and rump are black, transversely varied on the margin and at tip, with pale bright rusty, sprinkled with black, forming a confused mixture of black and rusty on the whole upper parts of the bird ; the long loose-webbed upper tail-coverts being similar, but decidedly and almost regularly banded with black, and sprinkled with

rusty, this colour being there much lighter and approaching to white, and even constituting the ground colour. The breast is brown, approaching to chocolate, each feather being terminated by a white fringe, with a large arrow-shaped spot of that colour on the middle of each feather, so that, when the plumage lies close, the feathers appear white with black crescents, and are generally described so. On the lower portion of the breast, the white spots, as they descend, become longer and narrower, the branches forming the angle, coming closer and closer to each other, till the spot becomes a mere white streak along the shaft, but, at the same time, the white marginal fringe widens so considerably, that the feathers of the belly may be properly called white, being brown only at their base, but the shaft is white even there, with no more than a brown heart-shaped spot visible on the middle. The heart-shaped brown spots of the belly become so very small at the vent, that this part appears pure white, with a few very small blackish spots; the long flank feathers are broadly banded with black and white, somewhat tinged with ochraceous exteriorly; the under tail-coverts are white, blackish along the shafts, and more or less varied with black in different specimens, also vary considerably as to the size and shape of all the spots, being in some more acute, in others more rounded, &c. The wings are eight inches long, the third and fourth primaries being the longest; the scapulars are uniform with the back, but, besides the rusty sprinkling of the margins and tip, the largest have narrow bandlike spots of a pure bright rufous, a slight whitish streak along the shaft in the centre, and a large white spot at the end. The smaller wing-coverts are plain chocolate brown; the spurious wing, and outer coverts, are of the same brown, but each feather bears at the point a large and very conspicuous pure white spot; all the other superior coverts are blackish, sprinkled, and banded with rusty, each furnished with a conspicuous terminal spot; the under wing-coverts, together with the long axillary feathers, are pure white, each with a single small dusky spot, and are

marbled with white and brownish on the outer margin; the quills are plain dusky brown, the primaries being regularly marked with pure white spots half an inch apart on their outer webs, except at the point of the first; the longest feather of the spurious wing, and the larger outer coverts, have also a pair of these spots; the secondaries, besides the outer spots, which assume the appearance of bands, are tipped with pure white, forming a narrow terminal margin; those nearest the tertials are also slightly marked with rusty; the tertials themselves are similar to the scapulars, that is, they are black, banded and sprinkled with different shades of rusty; the tail is strongly cuneiform and graduated, of eighteen feathers, with the middle five inches long, which is three more than the outer. According to some accounts, the two middle feathers are by more than two inches longer than the adjoining, but in all we have examined, the difference was little more than an inch; the four middle are similar in shape, texture, and colour, being narrow, flaccid, equal in breadth throughout, though somewhat dilated and cut square at the end. In colour, they vary considerably in different specimens, the ground being generally black, and the tips white, but more or less varied, in some with white, and in others with rusty; these colours being at one time pure, at another sprinkled with blackish, and assuming various tints; in one specimen they are disposed in spots, in another in bands, lines, chains, angles, &c.; but generally in a long stripe on each side of the shaft at base, and in transverse spots at the point of the two longest, while they are in round spots all along each side of the two shortest: in one specimen, the latter are even almost plain, being dingy white, sprinkled with blackish on the whole of their outer web; all the other lateral feathers, entirely concealed by the coverts, are pure white at the point, but with dusky shafts, and are more or less broadly dark cinereous at base; these feathers are very rigid, and of a curious form, tapering from the base to the point, where they suddenly dilate; they are deeply emarginated at tip, and their inner lobe projects considerably; the tar-

sus is two inches long; the slender hair-like feathers covering it, are, as well as the femorals, of a dingy greyish white, absolutely waved with dusky; the toes are strongly pectinated, and are, as well as the nails, of a blackish dusky, while the long processes are whitish.

The foregoing minute description is chiefly taken from a handsome male specimen from Arctic America. There is no difference between the sexes, at least we have not been able to detect any in all the specimens of both that we have examined; hence we conclude, that the difference generally described by authors, and which we have ourselves copied in our Synopsis, that of the breast being chocolate brown in the male, and uniform with the rest of the plumage in the female, does not exist. The female is merely less bright and glossy. Both sexes, like other grouse, have a papillous red membrane over the eye, not always seen in stuffed skins, and which is said to be very vivid in the male of this species, in the breeding-season. This membrane, an inch in length, becomes distended, and projects above the eye in the shape of a small crest, three-eighths of an inch high. The male at this season, like that of other species, and indeed of most gallinaceous birds, struts about in a very stately manner, carrying himself very upright; the middle feathers of the tail are more or less elongated, in young birds scarcely exceeding the adjoining by half an inch.

The spring plumage is much more bright and glossy than the autumnal, and also exhibits differences in the spots and markings. The specimen we have selected for our plate, on account of its being the only one we had from the United States territory, is a female in the autumnal dress, and was brought from the Rocky Mountains. We think proper to insert here in detail the description we took from it at the time, thus enabling the reader to contrast it with that made from a northern specimen in spring plumage, rather than point out each and all the numerous, and at the same time minute and unimportant variations.

The female represented in the figure was fifteen inches long; its general colour mottled with black and yellowish rufous; the feathers of the head above are yellowish rufous banded with black, the shaft yellowish; a line above the eye, the cheeks, and the throat, are pure yellowish rusty, with very few blackish dots, and a band of the latter colour from the bill beneath the eye, and spreading behind; all the lower parts are whitish cream, with a yellowish rusty tinge; each feather of the neck and breast, with a broad blackish subterminal margin, in the shape of a crescent, becoming more and more narrow and acute as they are lower down on the belly, until the lowest are reduced to a mere black mark in the middle; the lower tail-coverts and the femorals are entirely destitute of black. All the upper parts, viz., the back, rump, upper tail-coverts, and scapulars, have a uniform mottled appearance of black and rusty, each feather being black, with rusty shafts, spots, bands, or margins, the rusty again minutely dotted with black; on the rump, but especially on the tail-coverts, the rusty predominates in such a manner that each feather becomes first banded with black and rusty, then decidedly rusty, varied with black, which, however, does not change in the least the general effect. The wing-coverts are dusky, each with a large round white spot at tip, the inner gradually taking the markings of the back and scapulars; the lining of the shoulder is plain dusky, as well as the spurious wing and the primaries, each feather of the spurious wing having about five large round spots of white on its outer web; the primaries are regularly marked on the same side with eight or ten squarish, equidistant, white spots, with a few inconspicuous whitish dots on their inner web, besides; the secondaries are also dusky, but in them the spots take the appearance of bands continued across the whole feather, of which bands there are three or four, including the terminal; the inner secondaries become darker and darker as they approach the body, the white becomes rufous, the dots are more frequent, and they become confounded with the scapulars, and are banded and mottled with various

tints of black and rusty; the lower wing-coverts, and long axillary feathers, are pure white, the outer coverts being marbled with dusky. The tail is composed of eighteen feathers; it is cuneiform, very short, and entirely hidden by the coverts, except the four middle feathers; the two middle feathers are flaccid, narrow, equal in breadth throughout, longer than the others by more than an inch, rusty, crossed by chained bands of black, and dotted with black and whitish at tip; the two next are also longer than the others, nearly whitish, but almost similar in shape, markings, and texture, to the longest; the lateral decrease in size very fast from the centre, but by regular degrees, and are remarkably stiff, somewhat like those of woodpeckers, wider at base and tip than in the middle, pure white at the end and on the inner web, the shaft black, and the outer web dotted with blackish; they are deeply emarginate at tip, the inner lobe being longer, acute, and singularly shaped.

SPOTTED GROUSE.—TETRAO CANADENSIS.—PLATE XX. Male.
PLATE XXI. FIG. 1. Female.

Tetrao Canadensis, *Linn. Syst.* i. p. 274, sp. 3. *Gmel. Syst.* i. p. 749, sp. 3. *Lath. Ind.* p. 637, sp. 6. *Forster, in Phil. Tr.* lxii. p. 389. *Temm. Ind. Gall. in Hist. Pig. et Gall.* iii. p. 702. *Vieill. Nouv. Dict. Hist. Nat. Sabine, Zool. App. Frankl. Exp.* p. 683. *Nob. Cat. Birds U. S.* sp. 207. *Id. Syn. Birds U. S.* sp. 208.—*Tetrao canace, Linn. Syst.* i. p. 25, sp. 7, female.—*Lagopus Bonasa Freti Hudsonis, Briss. Orn.* i. p. 201, sp. 6. *Id. Suppl.* p. 10. *Id.* 8vo, iv. p. 56, male.—*Lagopus Bonasa Canadensis, Briss. Orn.* i. p. 203, sp. 7, pl. 20, fig. 2. *Id.* 8vo, iv. p. 57, female.—*Lagopus Freti Hudsonis, Klein, Av.* p. 117, sp. 6.—*La Gelinotte du Canada, Buff. Ois.* ii. p. 279. *Id. Pl. Enl.* 131, male, 132, female. *Sonn. Buff.* vi. p. 58. *Bonat. Tabl. Enc. Orn.* p. 197, pl. 91, fig. 2.—*Tetras tacheté, ou Acaho, Temm. Pig. et Gall.* iii. p. 160, bis.—*Black and Spotted Heathcock, Edw. Glean.* p. 118, pl. 118, male.—*Brown and Spotted Heathcock, Edw. Glean.* p. 71, pl. 71, female. *Ellis, Hudson Bay,* i. t. p. 50.—*Spotted Grouse, Penn. Arct. Zool.* sp. 182. *Lath. Syn.* iv. p. 735, sp. 6. *Id. Suppl.* p. 214, accid. var.—*The small speckled Pheasant, Lewis and Clark, Exp.* ii. p. 182, male.—*The small brown Pheasant, Id. Id. Exp.* ii. p. 182, female.—*Philadelphia Museum,* male.—*My Collection,* male and female.

TETRAO CANADENSIS.—LINNÆUS.*

Tetrao Canadensis, *Spotted Grouse, North. Zool.* ii. p. 346, pl. 62. *Temm.*

As may be seen by the synonymy, two separate species have been made of the present, the male and female being taken for

* In this place must be introduced the *Tetrao Franklinii* of Douglas, first noticed by that gentleman in the *Transactions of the Linnean Society*. It is a species which has been involved in confusion with the *T. Canadensis*, from the different opinions which those persons who have met with it, have formed. By the Prince of Musignano, and Mr Drummond, an acute observer, it is thought to be a variety only, while Mr Douglas, and the authors of the *Northern Zoology*, consider it distinct.

I have added the description of the latter naturalists, and some observations on its habits, by Mr Douglas. I cannot decide, not having specimens of both to compare; but, from the known variation of the markings of those birds, which will stand in the division *Tetrao*, a very accurate comparison, indeed, of numerous specimens, with the investigation of their habits, would be necessary, to distinguish those which are seemingly so nearly allied.

different birds. This error, which originated with Edwards and Brisson, from whom it was copied by Linné, was rectified

Tetrao Franklinii, Douglas.

Tetrao Franklinii, *Dougl. Trans. Linn.* xvi. p. 139. *North. Zool.* ii. p. 384.

"There is such a close resemblance between this and the common Canadian grouse, that the Prince of Musignano considers it only as a variety; and this opinion is entertained also by Mr Drummond, a very acute practical observer. The latter had ample opportunities of studying the manners of both, and he assures us that he is not aware of any difference between them; Mr Douglas, on the other hand, who has also seen these birds in their native regions, thinks differently, and although he observes, that, in habits, it assimilates more with *T. Canadensis* than any other, he considers the "unusually long, square tail," and its colouring, as sufficiently distinctive characters. In our species, the tail is not longer than that in *Canadensis*; and, did we look to the colouring alone, however strikingly different it is in the two birds, we should be disposed to class them as varieties. But a more accurate examination will detect some essential difference in the structure of the feathers themselves. Those of *Canadensis* are more graduated, giving the tail a rounder appearance; and they are all slightly, but distinctly emarginate in the middle, from whence arises a little mucro, or point, formed by the end of the shafts. Now, this emargination is not seen in *Franklinii*, nor is there any appearance of the mucro. Again, in the latter bird, the tail feathers are much broader, fully measuring one inch and a fifth across; whereas, those of *Canadensis* are barely one inch broad. Until, therefore, we become persuaded that distinctions drawn from structure are not to be relied upon, we must coincide with Mr Douglas in considering the present as a distinct species."—W. S.

"I have never heard," says Douglas, "the voice of this bird, except its alarm note, which is two or three hollow sounds, ending in a yearning, disagreeable, grating noise, like the latter part of the call of the well-known *Numida Meleagris*. It is one of the most common birds in the valleys of the Rocky Mountains, from latitude 50 to 54 degs., near the sources of the Columbia River. It may perhaps be found to inhabit higher latitudes. Sparingly seen in some small troops on the high mountains which form the base, or platform, of the snowy peaks, 'Mount Hood,' 'Mount St Helen's,' and 'Mount Baken,' situated on the western parts of the continent."

Those grouse known under the name of *ptarmigan*, or the form more familiar as represented by the common red grouse of Britain, typical of the genus *Lagopus*, should be also enumerated here.

The species mentioned by Mr Douglas, and farther described in the *Northern Zoology*, are all that have yet been authentically described as natives of North

by Buffon, Forster, and others; and in their decision Gmelin, Latham, and all subsequent writers, have acquiesced. Both sexes were tolerably well figured by Buffon, as they had also been previously by Edwards; but we feel justified in saying, that none of their plates will bear a comparison with the present.

The spotted grouse is well characterised by its much rounded tail, of but sixteen broad and rounded feathers, and may be at once distinguished from all others by the large and conspicuous white spots ornamenting the breast, flanks, and under

America. Mr Douglas hints at his knowledge of other two, but this was too imperfect to offer any detailed description. The species are:

Lagopus, Ray.

1. *L. mutus*, Leach. Common ptarmigan. According to Sabine, inhabits the island on the south-west side of Baffin's Bay. Dr Richardson never met with it himself in the fur countries, and thinks that the only authentic specimens from the New World are in the possession of Lord Stanley, to whom they were presented by Mr Sabine.
2. *L. saliceti*, Swain. Willow grouse. Inhabits the fur countries from the 50th to the 70th degs. of latitude, within which limits it is partially migratory; breeds in the valleys of the Rocky Mountains, the barren grounds, and Arctic coasts. It seems identical with the willow grouse of the old continent, which inhabits the greater part of Scandinavia, Kamtschatka, Greenland, Iceland, and the valleys of the Alps.
3. *L. rupestris*. Rock grouse. Closely allied, and long confused with *L. mutus*; inhabits Melville Peninsula, and the barren grounds, and descends along the coast of Hudson's Bay, as far as lat. 58 degs.; found on the Rocky Mountains as far south as lat. 55 degs.
4. *L. leucurus*, Swain. White-tailed grouse. *Hyeme albus: æstate variegatus, rectricibus semper albis*. This species is first described and figured in the *Northern Zoology*. The specimens were killed on the Rocky Mountains, and it is said to inhabit the snowy peaks near the mouth of the Columbia. Its summer dress is intermediate between *L. mutus* and *rupestris*, and it is at once distinguished from all the others, by its smaller size, and the pure white colour of the tail at all seasons.—ED.

tail-coverts. It has been inaccurately compared with the European *Tetrao bonasia*, from which it differs very materially, not even being of the same subgenus, and approaching nearer, if indeed it can be compared with any, to the *Tetrao urogallus*.

This bird is common at Hudson's Bay throughout the year, there frequenting plains and low grounds, though in other parts of America it is found on mountains, even of great elevation. It inhabits Canada in winter, and was seen by Vieillot in great numbers during the month of October, in Nova Scotia. Lewis and Clark met with it on the elevated range of the Rocky Mountains, and brought back from their western expedition a male specimen, now deposited in the Philadelphia Museum, where it has been long exhibited under the name of Louisiana grouse. This, as truly observed by Say, first entitled it to rank among the birds of the United States. But the Rocky Mountains are not the only region of the United States territory where the spotted grouse is found. We have traced it with certainty as a winter visitant of the northern extremity of Maine, Michigan, and even of the state of New York, where, though very rare, it is found in the counties of Lewis and Jefferson. On the frontiers of Maine it is abundant, and has been seen by Professor Holmes, of the Gardiner Lyceum, near Lake Umbagog, and others. In these countries, the spotted grouse is known by the various names of wood partridge, swamp partridge, cedar partridge, and spruce partridge. The American settlers of Canada distinguish it by the first. In Michigan and New York, it goes generally by the second. In Maine it bears the third, and in other parts of New England, New Brunswick, &c. more properly the last. We have been informed by General Henry A. S. Dearborn, that they are sent from Nova Scotia and New Brunswick to Boston, in a frozen state; as in the north they are known to be so kept hanging throughout the winter, and, when wanted for use, they need only be taken down, and placed in cold water to thaw. General Dearborn, to whom we are much indebted for the information which his interest for science has induced him

voluntarily to furnish, farther mentions, that he has heard from his father, that, during the progress of the expedition under Arnold, through the Wilderness to Quebec, in 1775, these grouse were occasionally shot between the tide waters of Kennebeck river and the sources of the Chaudiere, now forming part of the state of Maine. Fine specimens of the spotted grouse have been sent to the Lyceum of Natural History of New York, from the Sault de Ste. Marie, by Mr Schoolcraft, whose exertions in availing himself of the opportunities which his residence affords him, for the advancement of every branch of zoology, merit the highest praise. He informs us, that this bird is common from Lake Huron to the sources of the Mississippi, being called in the Chipeway language, *mushcodasee*, *i. e.* partridge of the plains.

The favourite haunts of the spotted grouse, are pine woods and dark cedar swamps, in winter resorting to the deep forests of spruce, to feed on the tops and leaves of these evergreens, as well as on the seeds contained in their cones, and on juniper berries. Hence their flesh, though at all times good, is much better in summer, as in winter it has a strong flavour of spruce. At Hudson's Bay, where they are called indifferently wood or spruce partridge, they are seen throughout the year. Like other grouse, they build on the ground, laying perhaps fewer eggs; these are varied with white, yellow, and black. They are easily approached, being unsuspicious, and by no means so shy as the common ruffed grouse, and are killed or trapped in numbers, without much artifice being necessary for this purpose. When much disturbed, like their kindred species, they are apt to resort to trees, where, by using the precaution of always shooting the lowest, the whole of the terrified flock may be brought down to the last bird.

The spotted grouse is smaller than the common partridge or pheasant, being but fifteen inches in length. The bill is black, seven-eighths of an inch long. The general colour of the plumage is made up of black and grey, mingled in transverse wavy crescents, with a few of greyish rufous on the neck.

The small feathers covering the nostrils, are deep velvety black. The feathers may all be called black as to the ground colour, and blackish plumbeous at the base; on the crown, upper sides of the head above the eye, and the anterior portion of the neck, they have each two grey bands or small crescents, and tipped with a third; these parts, owing to the grey margin of the feathers being very broad, appear nearly all grey; these longer feathers of the lower part of the neck above, and between the shoulders, are more broadly and deeply black, each with a reddish band, and grey only at tip; the lowest have even two reddish bands, which pass gradually into greyish; a few of the lateral feathers of the neck are almost pure white; all the remaining feathers of the upper parts of the body have two greyish bands, besides a slight tip of the same colour; some of the lowest and longest having even three of these bands, besides the tip. The very long upper tail-coverts are well distinguished, not only by their shape, but also by their colours, being black brown, thickly sprinkled on the margins with greyish rusty, and a pretty well defined band of that colour towards the point, then a narrow one of deep black, and are broadly tipped with whitish grey, more or less pure in different specimens; their shafts, also, are brownish rusty. The sides of the head beneath the eyes, together with the throat, are deep black, with pure white spots, the white lying curiously upon the feathers, so as to form a band about the middle, continued along the shaft, and spreading at the point; but the feathers being small on these parts, the white spots are not very conspicuous. The breast, also, is deep black, but each feather broadly tipped with pure white, constituting the large spots by which this species is so peculiarly distinguished. On the flanks, the feathers are at first, from their base, waved with black and greyish rusty crescents; but these become gradually less pure and defined, and by getting confused, make the lowest appear mottled with the two colours; all are marked along the shaft with white, dilating at tip, forming on the largest a conspicuous terminal spot. The vent is for a space

pure white, the tips of its downy feathers being of that colour : the under tail-coverts are deep black, pure white for half an inch at their tip, and with a white mark along the shaft besides. The wings are seven inches long, the fourth primary alone being somewhat longer than the rest. The upper coverts and scapularies are blackish, waved and mottled with greyish rusty ; the longest scapularies have a small terminal spot of pure white along their shaft. The smaller coverts are merely edged with greyish rusty, and in very perfect specimens they are even plain ; the under wing-coverts are brownish dusky, edged with greyish, some of the largest, as well as the long axillary feathers, having white shafts, dilating into a terminal spot ; the remaining inferior surface of the wing is bright silvery grey ; the spurious wing and the quills are plain dusky brown, the secondaries being slightly tipped and edged externally with paler, and those nearest the body somewhat mottled with greyish rusty at the point, and on the inner vane ; the primaries, with the exception of the first, are slightly marked with whitish grey on their outer edge, but are entirely destitute of white spots. The tail is six inches long, well rounded, and composed of only sixteen feathers. These are black, with a slight sprinkling of bright reddish on the outer web at base, under the coverts, which disappears almost entirely with age ; all are bright dark rusty for half an inch at their tip, this colour itself being finely edged and shafted with black. The tarsus measures an inch and a half ; its feathers, together with the femorals, are dingy grey, slightly waved with dusky ; the toes are dusky ; the lateral scales dingy whitish, and the nails blackish.

The female is smaller than the male, being more than an inch shorter. The general plumage is much more varied, with less of black, but much more of rusty. There is a tinge of rufous on the feathers of the nostrils ; those of the head, neck, and upper part of the back, are black, with two or three bright bands of orange rusty, and tipped with grey ; there is more of the grey tint on the neck, on the lower part of which above,

the orange bands are broader ; all the remaining parts of the body above, including the tail-coverts, are more confusedly banded and mottled with duller rusty, orange, and grey, on a blackish ground, these colours themselves being also sprinkled with a little black ; the sides of the head, the throat, and all the neck below, are dull rusty orange, each feather varied with black ; on the lower portion of the breast, the black bands are broad and very deep, alternating equally with the orange rusty, and even gradually encroaching upon the ground colour ; the breast is deep black, each feather, as well as those of the under parts, including the lower tail-coverts, are broadly tipped with pure white, forming over all the inferior surface very large and close spots, each feather having besides one or two rusty orange spots, much paler and duller on the belly, and scarcely appearing when the plumage lies close : the feathers of the flanks are blackish, deeper at first, and barred with very bright orange, then much mottled with dull greyish rusty, each having a triangular white spot near the tip. The wings and tail are similar to those of the male, the variegation of the scapulars and upper coverts being only of a much more rusty tinge, dull orange in the middle on the shaft, all the larger feathers having, moreover, a white streak along the shaft ending in a pure white spot, wanting in the male. The outer edge of the primaries is more broadly whitish, and the tertials are dingy white at the point, being also crossed with dull orange ; the tail feathers, especially the middle ones, are more thickly sprinkled with rusty orange, taking the appearance of bands on the middle feathers, their orange-coloured tip being, moreover, not so pure, and also sprinkled.

The bird represented in the plate, comes from the Rocky Mountains: it is a male, and remarkably distinguished from the common ones of his species, by having the tail-feathers entirely black to the end. This difference I have observed to be constant in other specimens from the same wild locality ; whilst all the northern specimens, of which I have examined a great number, are alike distinguished by the broad rufous

tip, as in those described, and as also described by Linné and all other writers, who have even considered that as an essential mark of the species. The Rocky Mountain specimens are, moreover, somewhat larger, and their toes, though likewise strongly pectinated, are, perhaps, somewhat less so, and the tail-coverts are pure white at tip, as represented in the plate. But, Heaven forbid that our statements should excite the remotest suspicion, that these slight aberrations are characteristic of different species! If we might venture an opinion not corroborated by observation, we would say, that we should not be astonished, if the most obvious discrepancy, that of the tail, were entirely owing to season, the red tip being the full spring plumage; though it is asserted, that this species does not vary in its plumage with the seasons. However this may be, we have thought proper to give a representation of the anomalous male bird from the Rocky Mountains in our plate, whilst the female, placed with the cock of the plains, that its reduced size may be properly estimated, has been chosen among the ordinary specimens having the tails tipped with red; the red tip being still more conspicuous in the common males, from which, in order to comprehend all, our description has been drawn up.

COCK OF THE PLAINS.—TETRAO UROPHASIANUS.

PLATE XXI. FIG. 2.

Tetrao urophasianus, Nob. in *Zool. Journ. Lond. Id. App. to Syn. Birds U.S.* p. 442, in *Ann. Lyceum Nat. Hist. N. York.*—The Cock of the Plains, *Lewis and Clark, Exp.* ii. p. 180, sp. 2,

TETRAO UROPHASIANUS.—BONAPARTE.*

Tetrao (centrocercus) urophasianus, *Swain. North. Zool.* ii. p. 358, pl. 53.

It is with the liveliest satisfaction that we are enabled finally to enrich the North American Fauna with the name, portrait, and description of this noble bird; which must have formed from the earliest periods a principal ornament of the distant wilds of the west. Hardly inferior to the turkey in size, beauty, and usefulness, the cock of the plains is entitled to the first place in the beautiful series of North American grouse, in the same rank that the cock of the woods so justly claims among those of Europe and Asia.

This fine bird, like its European analogue, seems to be restricted within certain bounds, and is probably nowhere numerous, owing to its bulk, limited powers of flight, and the eagerness with which it is pursued; but chiefly to its polygamous habits, which are the cause of desperate combats between the males for the possession of the females. However long the period since it was first heard of in the accounts of hunters and travellers, no more was known than that there existed in the interior of America a very large species of grouse, called by the hunters of the west the prairie turkey. We have little

* This fine species, with the *Tetrao phasianellus*, have been made into a subgenus by Mr Swainson. I have provisionally retained these birds in *Tetrao*, but have little doubt that this form will show its own and separate station among the *Tetraonidæ*. Mr Swainson thinks that it will represent the sconsorial form among these birds, from the structure of the tail; while the black cock of Europe is placed by him to show the fistirostral form, by its lyre-shaped tail and glossy colour bearing a faint resemblance to the Drongo Shrikes.—ED.

to add, it is true, to what is known of its habits, but we have it in our power to say that we have seen it; we can determine its place in the system; and now give a faithful representation of at least one sex.

We have again to acknowledge ourselves indebted, no less to the industry and sagacity, than to the liberal views of Mr Leadbeater, for the present opportunity of representing this bird. His invaluable collection contains the only specimen known to be any where preserved.

The name of cock of the plains was given by Lewis and Clark, and we have retained it, as being not only appropriate, but at the same time analogous to that of the large European species called cock of the woods. Similar reasons have influenced us in selecting the scientific name, which, though perhaps too long, and ill compounded, has nevertheless the advantage of combining analogy in meaning with the indication of a most remarkable characteristic of the bird. This species is in fact distinguished from all others of its genus, and especially from its European analogue, by its long tail, composed of twenty narrow, tapering, acute feathers; thus evincing the fallacy of the character erroneously attributed to all the grouse, of having broad and rounded tail-feathers. It is a singular fact, that both of the newly-discovered species from the north-western part of America, and they only, should be distinguished by the extraordinary number of the feathers of the tail. In the dusky grouse, however, they are broad and rounded. The cock of the woods, like the greater part of the species, has but eighteen, which are also broad and rounded. The only grouse in which they are found narrow is the sharp-tailed, though without being either acute or tapering, but, on the contrary, square at tip, and of equal breadth throughout, or, if any thing, the lateral rather broader at the tip.

Lewis and Clark first met with this bird on their journey westward, near the fountain of the Missouri, in the heart of the Rocky Mountains. They inform us that it is found on the plains of the Columbia in great abundance, from the en-

trance of the south-east fork of the Columbia to that of Clark's River. It appears also to extend to California, for there can be but little doubt that it is the bird erroneously called bustard by the travellers who have visited that country. Lewis and Clark state, that in its habits it resembles the grouse, (meaning probably *T. phasianellus*,) except that its favourite food is the leaf and buds of the pulpy-leaved thorn. The gizzard is large, and much less compressed and muscular than in most gallinaceous birds, and perfectly resembles a maw. When the bird flies, he utters a cackling note, not unlike that of the domestic fowl. The flesh of the cock of the plains is dark, and only tolerable in point of flavour, and is not so palatable as either that of the pheasant or grouse. It is invariably found in the plains.

The cock of the plains is precisely equal in size to the cock of the woods; at least such is the result of a comparison of the female with the corresponding sex of the European bird, both lying before us. Each part exactly coincides in form and dimension, excepting that the tail rather gives the superiority to the American, so that if the male bears the same relative proportion to his female, the cock of the plains must be proclaimed the largest of grouse. The two females are strikingly similar. The cock of the plains is, however, a much more greyish bird, wanting entirely the reddish that mottles, and occupies so much of the plumage of its analogue. This, the total want of beard-like appendages, and the singular shape of the tail, are the prominent discriminative features; to which may be added, that the under wing-coverts, marbled with black in the European, are pure white in our new species, though this, as well as the want of reddish, might be ascribed to the youth of our specimen. However this may be, the remaining differences will be better estimated by attending to the following minute and accurate description.

The female of the cock of the plains, represented in the plate, of one-half the natural size, is from twenty-eight to thirty inches in length. The bill is one inch and a quarter

long, perfectly similar to that of *T. urogallus*, perhaps a trifle less stout, and with the base (if this remarkable character be not accidental in our specimen,) farther produced among the feathers of the front; the whole plumage above is blackish, most minutely dotted, mottled, and sprinkled with whitish, tinged here and there with very pale yellowish rusty, hardly worth mentioning; on the head, and all the neck, the feathers being small, minutely crossed transversely with blackish and whitish lines, gives the plumage quite a minutely dotted appearance; the superciliar line is slightly indicated by more whitish; on a spot above the eye, in the space between the bill and eye, and along the mouth beneath, the black predominates, being nearly pure: on the throat, on the contrary, it is the white that prevails, so as to be whitish dotted with black; on the lower portion of the neck, the black again is the prevailing colour, the black feathers there being nearly tipped with greyish; the sides of the neck are pure white for a space; from the lower portion of the neck to the upper tail-coverts inclusively, the back, scapulars, wing-coverts, and secondaries, the blackish feathers have each two or three yellowish white bands, which are broader, especially on the upper part of the back, and are moreover sprinkled with white somewhat tinged with rusty; the scapulars and wing-coverts are besides shafted with white, somewhat dilating towards the point, the scapulars being of a deeper black; the spurious wing and primaries are plain dusky, with paler edges, the outer with some indications of whitish dots (generally found in grouse) on the outer vane, but no regular white spots; the secondaries are tipped with white, and those which are next to the primaries nearly plain on their inner web; the primaries are rather slender, the inferior surface of the wings is of a very pale silvery grey; the under wing-coverts and long axillary feathers being pure silvery white, excepting on the lining of the wing, which is dusky blackish; the wings are twelve inches long; the breast is greyish, somewhat mottled with black; on each side below is a pure white space, some of the feathers of which are tipped

or banded with black; the large feathers of the flanks are blackish, shafted with white, crossed by several whitish bands, and sprinkled with yellowish; a broad oblong patch of deep brownish black occupies the whole of the belly and vent, the outer feathers being shafted with white, and broadly white at the point of their outer webs; the femorals and small feathers of the tarsus extending between the toes are yellowish grey, minutely waved with blackish; the tarsus measures two inches; the toes are dusky black, and the pectinated row of processes long, strong, and dingy whitish; the nails, blackish; the whole base of the plumage, with the exception of that of the neck beneath, which is white, is of a dusky grey. The tail is ten inches long, and in colour, is, as well as its coverts, in harmony with the rest of the plumage; the ground colour is blackish, and crossed, or rather mottled, with bands of whitish spots disposed irregularly, between which are small additional darker spots; the two middle ones are mottled all over, but the others are almost immaculate on their inner vane, and at the point; hence the lower surface of the unexpanded tail is of a silvery grey, much darker than that of the wings; at the very tip of the tail-feathers, the middle excepted, appears a very small whitish spot, the two outer pairs being rather broadly yellowish white, dotted with blackish on that part; the tail is composed of twenty feathers, the highest number ever met with in any tribe of birds. Although it appears strongly cuneiform, owing to the remarkable shape and curve of the feathers, it is, when expanded and properly examined, nothing more than much rounded; the two in the middle, which are the longest, reaching but a trifle beyond the adjoining, and so on in succession, the difference in length increasing progressively, but very gradually at first, and more and more as they are distant from the centre, there being nearly an inch difference between the third and second, and full that between the second and the outer, which is only six inches long, while the middle is ten. All the twenty are narrow, tapering, acute, and falciform, turning inward. Those toward the middle are

less curved, but more conspicuously acuminate and narrow for nearly two inches, all but the middle ones being slightly square at their narrow tips.

Though we have reason to believe that the specimen described and figured is a female, yet, from the broad patch upon the belly, and other marks unnecessary to be specified, we should not be surprised at its being a young male just beginning to change. In that case, and supposing him to have attained his full growth, this species would prove to be inferior in size to the cock of the woods, as its male would only be equal to the female of the latter.

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GENERAL INDEX

OF

ENGLISH AND LATIN NAMES.

The names printed in Italics are the species introduced into the notes, not mentioned in the original; those with the Asterisk prefixed are synonyms.

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